

SOAP

and SANITARY CHEMICALS

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In this Issue...

Textile detergents, a study
of soap mixture composi-
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* * *

A survey of the "average"
sanitary supply house

* * *


Factors which determine
safe floors and finishes

* * *

Door-to-door soap sam-
pling—a study of methods
and tie-ins

*Cover photo . . . Nils S. Dahl,
for 20 years Treasurer, Assn.
of American Soap & Glycerine
Producers; 20 years Treas-
urer, Laundry & Cleaners
Allied Trades Assn.; 46 years
with John T. Stanley Co., cur-
rently general manager.*

SEPTEMBER 1950



D&O AEROSOL FRAGRANCES
PUT YOUR PRODUCT

**out front
on display
in demand**

Manufacturers of Room Deodorants, Insecticides,
Formaldehyde Sprays, Detergents, Liquid Soaps,
Polishes, Waxes and Cosmetic Products

are all agreed they face keener,
tougher competition in the days
immediately ahead. These manufacturers
also acknowledge the need for
additional promotional and merchandising
aids to make their products more
acceptable, more saleable to the consumer.

Recognizing this need, the D&O
Laboratories have developed a
comprehensive series of tested Aerosol
fragrances that are bound to add
forceful, persuasive, compelling
subtleties that will put your product...

out front, on display, in demand.



DODGE & OLCOTT, INC.

180 Varick Street • New York 14, N. Y.

ATLANTA • BOSTON • CHICAGO • CINCINNATI • DALLAS • LOS ANGELES • PHILADELPHIA • ST. LOUIS • SAN FRANCISCO
ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME BASES • VANILLA • FLAVOR BASES



Do you know what **BLANCH** DOES!

This is what **BLANCH** does! **BLANCH** chases floor film—eradicates scum from dingy floor surfaces with spectacular results. Rid floors of disfiguring scum quickly, easily and spectacularly with **BLANCH**.

Constant cleaning of floors often leaves behind a film which is largely an accumulation of metallic salts, soap curds, soap film, grease, etc., sometimes caused by hardness of water. Constant cleaning builds up this film until it is a hard-to-remove scummy substance.

BLANCH has been perfected to remove this unsightly scum . . . without scrubbing . . . without detrimental effects to floor surfaces and without interruption of the regular cleaning maintenance program. **BLANCH** itself has wonderful cleaning power. Simply substitute **BLANCH** for the regular cleaner whenever floor film builds up. **BLANCH** completely removes all evidence of scum and returns the floor to practically its original lustre.

BLANCH—For Every Floor Maintenance Program

BLANCH is an important product for occasional use primarily on hard surface floors. **BLANCH** has a definite place in every floor maintenance program.

BLANCH is the *over-haul* of floor maintenance. Its importance is almost immeasurable. Cleaning, waxing and other phases of the floor maintenance program show improved results on a surface which has been freed of disfiguring scum.

A NOTE TO JOBBERS

BLANCH is a terrific "door-opener". Customers will be delighted to learn about this product. The effective "desk-side demonstration" is a whiz at winning customers.

BLANCH is not only a superior product . . . **BLANCH** does a wonderful Public Relations job for you! Write today for full information. Fuld Bros. products are sold only through Jobbers!

DESK SIDE DEMONSTRATION PROVES THE EFFECTIVENESS OF **BLANCH**



FIG. I Fill demonstration tube with 3 cc of liquid soap.



FIG. II Add about 17 cc of water and shake to make average cleaning solution.



FIG. III Add two drops of concentrated alkaline hardness.



FIG. IV Shake and watch the salt curds form despite the presence of a large amount of soap.



FIG. V Now add a few drops of **BLANCH**.



Kits for making the above Desk Side Demonstration are available to Jobbers selling **BLANCH**.

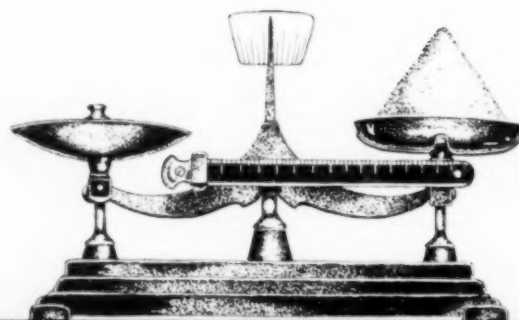
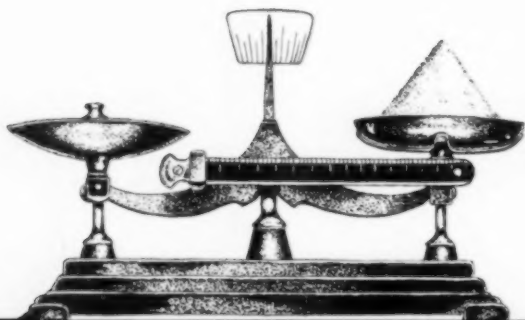
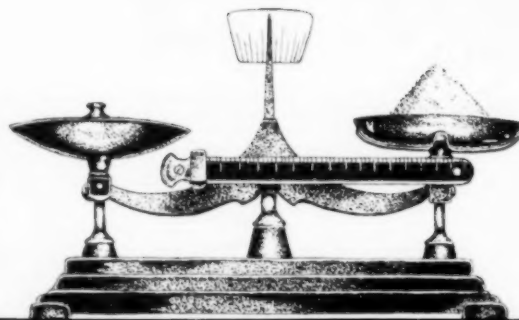
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Manufacturers of Sanitary Maintenance Chemicals

solve your bulking problem with **SANTOMERSE N^o1**



The weight of SANTOMERSE No. 1 on each of the above scales is the same. Notice the difference in bulk.

Monsanto's Santomerse No. 1 is manufactured in three controlled densities, enabling you to bulk your product the way you want it to meet the demand of your markets.

With Santomerse No. 1, the *all-purpose* detergent and wetting agent, it is easy for you to make efficient cleaning compounds. Santomerse No. 1 produces abundant suds in hard water—prevents formation of insoluble curds. Santomerse No. 1 is effective in hot or cold water and in acid, neutral or alkaline solutions. It lifts out particles of grease and grime, holding them in suspension so they cannot be redeposited . . . so they will be whisked away in the rinse.

Available as flakes or granules, Santomerse No. 1 blends easily without special equipment. Santomerse No. 1 is compatible with other detergents and builders and, mixed with them, it merges into a uniform blend.

For information and quotations on Santomerse No. 1, mail the coupon or contact the nearest Monsanto Sales Office. MONSANTO CHEMICAL COMPANY, Phosphate Division, 1777-J South Second St., St. Louis 4, Missouri.

Santomerse: Reg. U. S. Pat. Off.

5 REASONS why you'll prefer SANTOMERSE No. 1

CONTROLLED DENSITY—Manufactured in three densities . . . gives you bulking to suit your products and markets.

COMPATIBILITY—Santomerse No. 1 is compatible with other detergents and builders.

EASY BLENDING—Available in flakes or granules, giving you a selection to blend readily with other ingredients without stratifying.

PROTECTED QUALITY—Santomerse No. 1 is shipped in wax-lined drums to protect quality in transit and storage.

PROMPT SERVICE—Santomerse No. 1 . . . warehoused in 13 cities, coast to coast . . . will be shipped promptly from a point near you.

DISTRICT SALES OFFICES:

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Detroit, Los Angeles,
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Portland, Ore., San Francisco,
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MONSANTO CHEMICAL COMPANY

Phosphate Division
1777-J South Second Street, St. Louis 4, Missouri

Please send information and quotations on Santomerse No. 1.

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Company

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SOAP

Volume XXVI

Number 9

September 1950

and SANITARY CHEMICALS

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FRANK J. REILLY, Editor

Associate Editors
ELEONORE KANAR

JOHN VOLLMUTH

Business Manager
THOMAS MORGAN

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These Routes Lead to Economy

● To serve customers more economically, Mathieson has strategically located not one but three great tide-water plants.

From these deep-water ports Mathieson is able to move economically large tonnages of heavy chemicals, new, improved fertilizers and special chemicals through low-cost shipping over inland waterways, along the coast or across the seven seas.

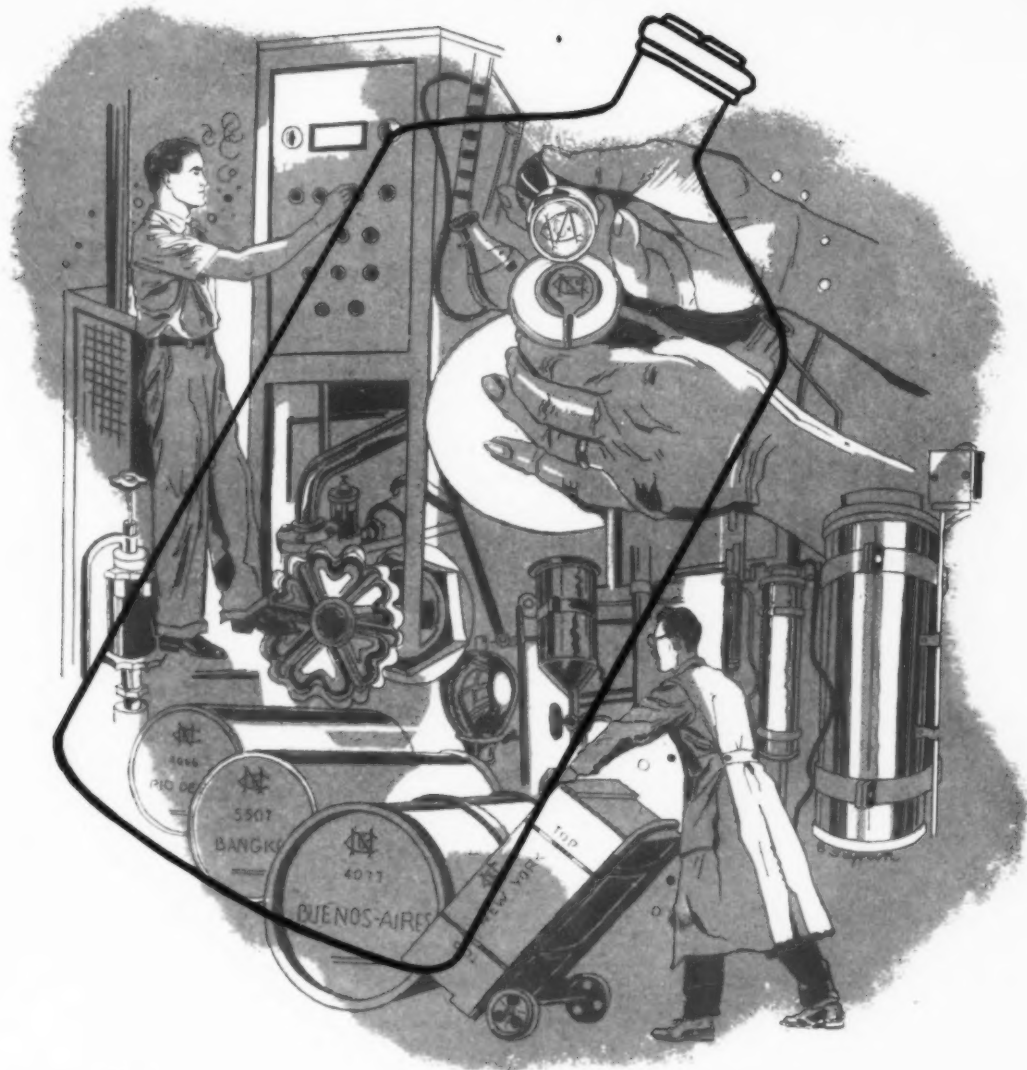
Reflected also in Mathieson chemicals are the customer benefits accruing from the efficient handling of incoming raw material at these tide-water ports.

Mathieson's constantly improving and expanding facilities for research, production and delivery are the result of one aim — to provide chemicals for the betterment of industry, agriculture and public health.



Mathieson Chemical Corporation
MATHIESON BUILDING,
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SERVING INDUSTRY, AGRICULTURE AND PUBLIC HEALTH



***"behind the product—
original research"***

Firmenich perfume specialties are based almost exclusively on entirely new bodies discovered in the course of pure chemical research. We are justly proud that men whose names are known and respected throughout the chemical profession — Ruzicka, Stoll, Schintz — are members of our research staff. These men and their associates have made possible such world-famous Firmenich specialties as Exaltolide, Wardia, Dianthine.

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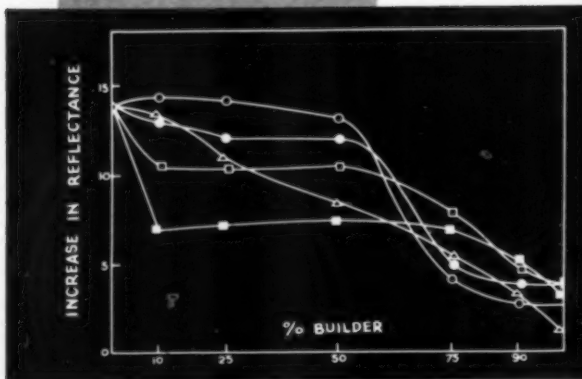
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NOW...

New Cleanliness at Less Cost with Synthetic-Silicate Combinations



PQ SOLUBLE SILICATES boost the dirt-removing power of synthetics. This is shown in the chart to the left, which is based on a recent study using synthetic detergent-builder mixtures in 50 ppm hard water. In the range of 10 to 50% additions of PQ Silicates, reflectance values are superior to the straight synthetic and to those with other builders.

In formulating your synthetic-builder mixtures, you can reduce their high costs by specifying dependable PQ Quality Silicates. These insure top performance not only in dirt removal but in preventing dirt redeposition and other detergent values. Send for a copy of Bulletin #1-15 "Detergent Properties of Alkyl Aryl Sulfonate-Builder Mixtures" by R. C. Merrill & Raymond Getty.

PHILADELPHIA QUARTZ COMPANY
1152 PUBLIC LEDGER BUILDING
PHILADELPHIA 6, PENNSYLVANIA



○ N Silicate, 41° Baume Ratio 1:3.2
● C Silicate, 59° Baume Ratio 1:2.0
□ Metso Granular, Sodium Metasilicate Ratio 1:1
■ Pyrophosphate
△ Soda Ash



MINTENE

The original Mint Disinfectant

STILL THE LEADER BECAUSE

no phenolic after-smell

MINTENE DISINFECTS AND DEODORIZES IN ONE APPLICATION



Floors, Walls, Equipment, Restrooms, Locker Rooms, Gymnasiums, etc., etc.



Everybody likes our Mintene disinfectant because it doesn't start in with a mint aroma and wind up with a phenolic after-smell. Mintene is always fragrant, always delightful . . . never gives off a disinfectant odor.

When we first formulated Mintene—in the early '30's—we sought a flavor that folks wouldn't tire of. It seemed to us that a combination of mint fragrances including U.S.P. oils of peppermint and spearmint would fill the bill, since the public favored these fragrances day in and day out in their chewing gums.

And today Mintene—"cool and refreshing as a Mint Julep"—is the outstanding leader in its field.

It is, of course, as powerful and safe as it is fragrant—even killing the resistant organisms that cause athlete's foot. (Incidentally, Mintene makes a most refreshing prophylactic foot bath.)

It mixes with water—one gallon to 100 gallons—to make a milky, stable solution of extra disinfectant-deodorant potency entirely safe to use.

AVAILABLE IN ALL STANDARD SIZE CONTAINERS

Hyman

PRODUCTS CO., 932 West 38th Place, Chicago 9, Illinois

Get these "plus" values with Wyandotte Kreelon

Free flowing flakes or powder  Guaranteed detergency

 Lighter color  Clearer solution

 **40%**
(minimum) **active agent**

THERE's a good chance that your products can benefit from these and other important advantages of Wyandotte Kreelon*.

This superior detergent and wetting agent is made under rigid manufacturing specifications. It is white in color, provides maximum detergency (soil removal and whiteness retention). In

addition, it dissolves faster and more completely than most other detergents.

For further details concerning the properties and applications of Wyandotte Kreelon, write us today.

*Reg. U. S. Pat. Off.

Wyandotte Chemicals Corporation
Wyandotte, Mich. • Offices in Principal Cities

SODA ASH • CAUSTIC SODA
BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE
CHLORINE • HYDROGEN • DRY ICE
SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE
PROPYLENE DICHLORIDE
AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

 **Wyandotte**
REG. U. S. PAT. OFF.

**NOW a NEW
HIGH IN MOP
PERFORMANCE
and a NEW LOW
in Mopping COST**

**Faster acting!
Longer lasting!
Lower priced!**

Impartial laboratory tests have demonstrated that the type of cellulose and the spinning method used to form DURA-SORB yarn, result in a faster rate of absorbency than even mops offered at premium prices—by a margin of almost 2 to 1. And, because of DURA-SORB'S durability, users buy mop-heads less often. Finally, DURA-SORB is not extravagantly priced. All this combines to deeply slash the cost of mopping.

Use on Any Floor!

Here is a new man-made mop-yarn that is NOT fragile. It glides over rough and smooth floors... picks up completely. This, instead of tearing and leaving a trail of yarn bits in its wake.

**Dura-Sorb
WET MOP**

TEST IT FOR

RUGGEDNESS

Tests on your own floors, like laboratory tests, will prove that DURA-SORB yarn is amazingly tough—not spongy and fragile. Here's a mop-head with a new mileage record.



WATER ABSORPTION

An easy way to test DURA-SORB yarn for absorbency is to put a strand in a glass of water. Let one end overhang the glass. Note (1) how the yarn instantly sinks into the water, and (2) how the water syphons out in a stream of drops! Compare with any other yarn of any material.



RINSABILITY

DURA-SORB has a "greedy" affinity for water and grime. But it divests itself just as readily of its dirty load when wrung out or rinsed.



* We are the manufacturers of the nationally famous BIG X DUST MOPS, VICTORY WET MOPS and HOLZEM APPLICATORS. Specification sheets on request.

For ROUGH and Smooth Floors:
The RUGGED

Dura-Sorb
TRADE MARK
SPUN CELLULOSE WET MOP

(Fits any standard mop holder)
(A size for every size floor)

**AN AMAZING
NEW!
MOP YARN**

We guarantee
DURA-SORB
is superior in performance to
any other wet-mop of any
material at any price—or your
money back!

**LEARN
THE 3 R'S
OF MOPPING
BY ACTUAL
TEST**



RUGGED

No need to "use only on smooth floors." DURA-SORB takes floors as they come. Use DURA-SORB on rough floors—any floor!

RAVENOUS

DURA-SORB instantly licks up water and dirt on contact. Independent laboratory tests (ask for copy) prove DURA-SORB picks up faster and holds more water than much higher-priced mops.

RINSABLE

DURA-SORB has a record-breaking ability to drop its load of dirt and grime instantly... Just wring out or hold under running water. It dries out soft and sanitary.

**FILL IN,
TEAR OUT,
MAIL NOW**



MAIL THIS COUPON
Make Your Own Test on Your Own Floors!

AMERICAN STANDARD MFG. CO. (Incorporated 1908) *
Charles E. Krebs and Walter O. Krebs
2515 S. Green St., Chicago 8, Ill.

Send us a sample of DURA-SORB yarn and specifications. Also quote on a trial shipment of money-back-guaranteed DURA-SORB mops.

MY NAME.....

FIRM NAME.....

ADDRESS.....

A GUIDE

TO WAX PRODUCTS PURCHASING

FOR PRIVATE BRAND RESALE



SELF POLISHING WAXES

Candy's Supreme—Candy's Supreme Special AS

Candy's DeLuxe—Bright Beauty

Four floor waxes that are all-around top quality for any given traffic condition. Each imparts the finest protection and beauty to floors for which they are best suited.

Bright Beauty FLOOR CLEANER

An outstanding material for removing even the heaviest wax film and dirt... Brings neglected floors "back to normal." The right cleaning agent to insure the most efficient floor maintenance.

Bright Beauty CREAM FURNITURE POLISH

A cream furniture polish that spreads easily, polishes without excessive effort and imparts a deep impressive lustre. Too, it permits repeated repolishing with a dry cloth saving reapplications time and again; truly a very economical polish of very highest quality.

Bright Beauty PASTE WAX

A paste wax that is properly blended and refined from excellent quality solids and solvents that produce the best drying time and thorough evaporation. A wax that is easy to handle, having "creamy" consistency and stability throughout its stocking and usage period.

Bright Beauty LIQUID (spirit) PREPARED WAXES

Complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each its own "Dry-Cleaner," they keep a surface waxed with a superb protective coating necessary to many difficult surfaces such as certain floors (where adaptable), bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a Glass Cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanness to glass that is actually true in fact. Different in color only as Silver polish, it imparts a highly desirable lustre to all silver without abrasion and can even correct the abuses of scratchy, "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Basic advantages are freedom from "balling up," thus does not gather dirt and impregnate the floor with hard spots difficult to remove... also is free from dusty effects. Adds the protective quality to expensive ballroom floors that means more "floor-years" to users everywhere.

Bright Beauty Heavy Duty PASTE CLEANER

Really cleans and scours more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive quality, it frees almost every surface from all forms of foreign matter to perfection.

An honest appraisal of floor wax products as we see it is offered to guide wax buyers who want the best quality money can buy...

1. BEAUTY AND DURABILITY

should be considered together. Initial appearance is important, but for a waxed surface to remain beautiful it must be durable. Durability depends not only on resistance to the abrasion of traffic, but even more so on resistance to the collection of dirt and to discoloring traffic marks. Durability is really measured by how long the waxed surface maintains a nice appearance before the necessity of complete removal and re-waxing.

2. ANTI SLIP

qualities are necessary in a good wax as a matter of safety underfoot. This important quality does not necessarily require the sacrifice of beauty and protection which are the foremost original reasons for the use of a wax. Look for the proper balance—a wax film which is not excessively slippery yet which is not tacky and does not excessively collect dirt.

3. WATER RESISTANCE

is important, particularly when considering the possibility of wet traffic and the necessity for frequent damp mopping for the purpose of removing surface dirt. Overdoing this quality means greater difficulty in applying multiple coats of wax and may seriously increase the difficulty in removal when complete cleaning and re-waxing is necessary. Water resistance is important, but so is the quality of removability.

4. SOLID CONTENT

when expressed in percentage is not nearly as important as the quality of the solid content. When considering good quality, 12% of solids answers most needs for good planned maintenance programs. Two applications of 12% will give better results than one of 18%. However, the more concentrated material is useful for some programs of maintenance and particularly on "washed-out" floors, etc. Over-waxing should be avoided so that periodic complete removal will not be too difficult.

5. CARNAUBA WAX

is still the most important basic ingredient in our floor waxes. When refined and compounded with other important ingredients and "KNOW HOW," it aids materially in producing the most important features of a good floor wax... ALL AROUND QUALITY OF PERFORMANCE.

● ALL AVAILABLE FOR PRIVATE BRAND ONLY

We do not compete with our jobbers for consumer sales. We sell only to distributors, except for experimental accounts in Chicago essential to research.

Wax Specialists for over 55 years
Candy & Company, Inc.
 2515 W. 35th ST., CHICAGO



Low-sudsing, 100%-active detergent for—

Commercial and home laundry compounds
Dishwashing compounds
Metal cleaning and treating
Paint and wall cleaners
Textile processing
Paste cleaners

Barrier creams
Preparation of nondusting detergent mixtures
Detergents for sanitation
Floor cleaners
Liquid detergents

STEROX CD

The following properties present a clearer picture of the values of STEROX CD — one

of Monsanto's extensive line of synthetic detergents and wetting agents.

PROPERTIES OF STEROX CD

COMPOSITION . . . Sterox CD is a 100% active, nonionic-type of surface-active agent, emulsifier, and detergent.

APPEARANCE . . . Sterox CD is a pale yellow to light-amber colored liquid which has a mild, somewhat sweet fatty odor that is not objectionable and can easily be perfumed if desired.

PHYSICAL PROPERTIES . . . Sterox CD is a medium-viscosity liquid at room temperature, and has a pour point of approximately 50° F. Sterox CD is soluble or miscible with water in all proportions at room temperature.

CHEMICAL PROPERTIES . . . Sterox CD is chemically a polyoxyethylene ester, and this nonionic material, as contrasted to the more common anionic types, yields in solution substantially no ions subject to inactivation by water hardness. The inertness of this product to water hardness or metallic salts makes it economical to use by requiring only small amounts to be effective. There is no objectionable scum or curd formed in hard water.

FUNCTIONAL PROPERTIES . . . Sterox CD is designed to give very little suds and this property is valuable where minimum or controlled sudsing is required. Sterox CD has a high deterative efficiency over a wide range of concentrations and temperatures, in soft or

hard water. Because of this and the other properties previously mentioned, Sterox CD is most generally useful in detergent compositions, for laundry operations, scouring applications in the textile field and general industrial cleaning. Many diversified fields are finding use for Sterox CD and many varied applications are possible for this versatile product. For example, the uses range from cosmetic preparations to metal cleaning.

COMPATIBILITY . . . Sterox CD is not only compatible with, but is frequently beneficially added to, anionic detergents, both synthetics and soaps. It is also compatible with the cationic-type detergents. Sterox CD is enhanced in efficiency by combination with alkaline "builder" materials such as phosphates, silicates and carbonates. Sterox CD is also effectively used with the acid-type cleaners.

Sterox: Reg. U. S. Pat. Off.

Full data and sample of Sterox CD will be sent promptly upon request. Mail the coupon or contact the nearest Monsanto Sales Office.

MONSANTO CHEMICAL COMPANY, Phosphate Division, 1777-J South Second Street, St. Louis 4, Missouri.
DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.



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MONSANTO CHEMICAL COMPANY
Phosphate Division

1777-J South Second Street, St. Louis 4, Missouri

Please send Sterox CD Technical Bulletin No. P-129 ☐, sample of Sterox CD ☐, prices on Sterox CD ☐.

Name.....Title.....

Company.....

Street.....

City.....Zone.....State.....

"and soon there'll be three"



**Third Electric Furnace Unit
For Pocatello, Idaho Plant
To Provide An Ever Increasing
Supply of Westvaco Phosphates**

ALKALIES

CAUSTIC POTASH
Liquid 45-50%, Flake and Solid 88-92%
CAUSTIC SODA
Liquid 50% Standard and Rayon Grades
Liquid 70-73% Std. Grade, Flake and Solid
NATURAL SODA ASH

PHOSPHATES

ACID SODIUM PYROPHOSPHATE
DISODIUM PHOSPHATE
MONOSODIUM PHOSPHATE
SODIUM TRIPOLYPHOSPHATE
TETRAPOTASSIUM PYROPHOSPHATE
TETRASODIUM PYROPHOSPHATE
TETRASODIUM
PYROPHOSPHATE CRYSTALS
MONOPOTASSIUM PHOSPHATE
DIPOTASSIUM PHOSPHATE
TRIPOTASSIUM PHOSPHATE
PHOSPHORIC ACID 75%

OTHER CHEMICALS

BARIUM PEROXIDE
BLANC FIXE (Barium Sulphate)
CARBON BISULFIDE
CARBON TETRACHLORIDE
FIRE EXTINGUISHER FLUID
HYDROGEN PEROXIDE
MAGNESIUM CHLORIDE
SODIUM SULFIDE

1948-1949-1950-in each of three succeeding years construction of a new electric furnace and supplemental facilities has been started at our Pocatello, Idaho plant.

America's industrial and household consumption of phosphates in general and Westvaco phosphates in particular seems to grow as fast as new facilities can be built. Our modernized phosphate processing plant at Carteret, N. J. and our new facilities at Newark, Calif. will soon be supplemented by another new processing plant at Lawrence, Kansas.

With a nationwide network of plants and a complete line of alkalies, phosphates and mixtures, we will welcome an opportunity to discuss the probability of serving your needs more effectively or economically. Your inquiry will receive prompt, courteous attention.

Westvaco
CHEMICALS

WESTVACO CHEMICAL DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

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ST. LOUIS, MO. • LOS ANGELES, CALIF. • NEWARK, CALIF.



DEPENDABLE SOURCE FOR BOTH ALKALIES AND PHOSPHATES.

Where's the liquid cleaner bargain today?

A few years ago most liquid cleaners were considered good. They were the only ones available. Then, quite by plan, ALKATROL CONDITIONER-CLEANER, the advanced cleaner, developed! ALKATROL is completely new. Put to practical test, results prove startling. Flooring surfaces, thought to be thoroughly cleansed by those now antiquated cleaners, respond to ALKATROL with original true lustre. The surface becomes more beautiful, brighter, filmless, scum-free.

Two additional results are noted. One—labor costs, always the largest cost in cleaning operations, drop tremendously. ALKATROL CONDITIONER-CLEANER virtually works by itself. Scrubbing and heavy mopping are now as old fashioned as high button shoes. Two—the completely clean floor surface is *conditioned*. Not only is the original lustre restored, but its life is actually prolonged; and the surface is made potentially safer* for trampling feet.

*ALKATROL is listed by Underwriters' Laboratories, Inc., as an anti-slip floor treatment material. Safe for the floor, safe to walk on!



ALKATROL

Conditioner-Cleaner is approved anti-slip material



Chemical Service of Baltimore

HOWARD & WEST STREETS ★ BALTIMORE 30, MARYLAND

Manufacturers of quality waxes, soaps, cleaners, disinfectants and chemical specialties

Review these new facts in your own way. The question, "Where's the liquid cleaner bargain today?" is answered by these three vital words—ALKATROL CONDITIONER - CLEANER! What percentage is there, at any price, in selling less than ALKATROL! For complete and specific details, and samples of ALKATROL, write today.

EXTRA NEWS! NOW, a new feature has been added to provide another great service.

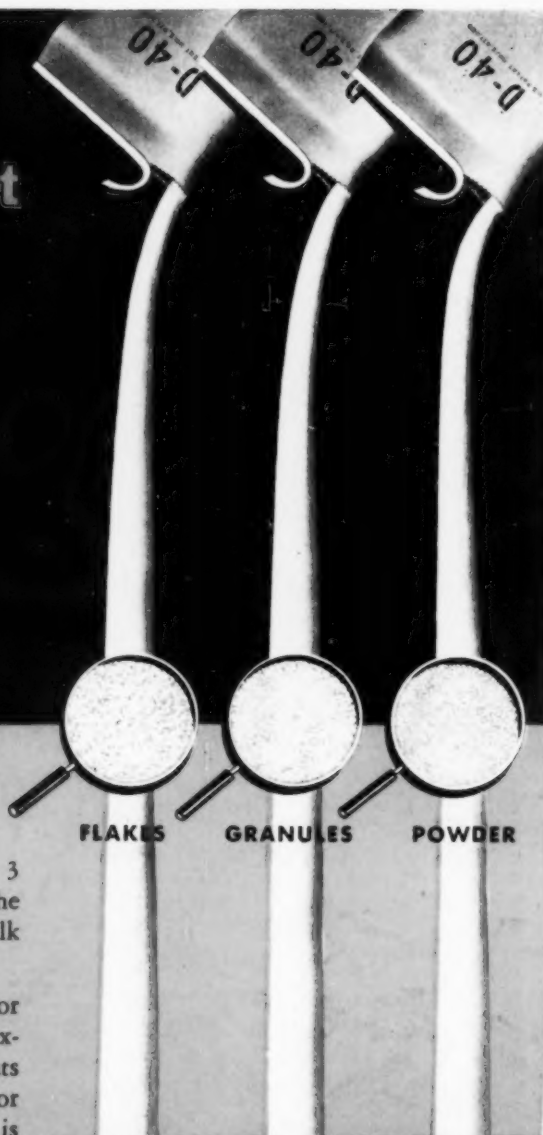
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D-40 Detergent

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whiter
color

NOW IN 3 PARTICLE SIZES...



New, whiter D-40 Detergent is now available in 3 forms—flakes, granules and powder. All are of the same high quality but differ in particle size and bulk density to suit any requirement.

The new D-40 possesses the same inherently superior characteristics as before. It is neutral, yet gives unexcelled detergency. It is a superior emulsifier of fats and greases, is excellent as a reducer of surface or interfacial tension even in low concentrations and is effective in strong acid or alkali solutions.

From any standpoint, D-40 is the ideal detergent for compounders and repackagers of all types of washing or cleaning products, whether for industrial or household use.

TRY THE NEW D-40 DETERGENT NOW

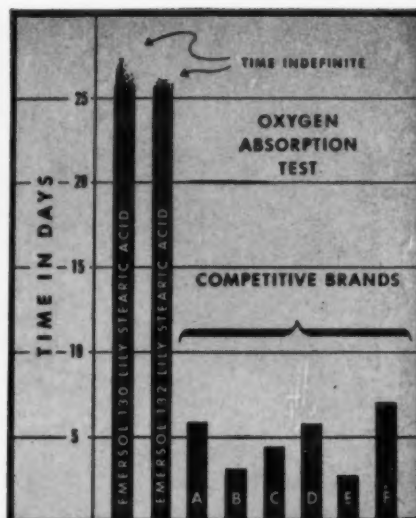
Contact nearest Oronite office.

ORONITE CHEMICAL COMPANY

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Oxygen Absorption Test Proves: AMAZING STABILITY OF EMERSOL STEARIC & PALMITIC ACIDS!



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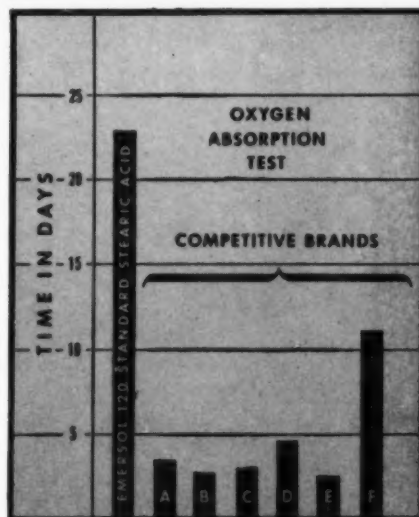
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Your finished products are only as good as the **STABILITY** of the fatty acids you use. New processing techniques have enabled Emery to produce Stearic and Palmitic Acids exhibiting the highest color, odor, and oxidation stabilities available . . . all properties which reflect in and are important to finished products.

The oxygen absorption test, which measures the time required for the absorption of a standard quantity of oxygen in a closed system, illustrates the superior stability of the Emersol Stearic Acids.

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Be assured of the highest grade products with maximum shelf life by specifying Emersol Stearic and Palmitic Acids. Send for free booklet and see how Emery Solid Fatty Acids will make your products better . . . stay better longer!



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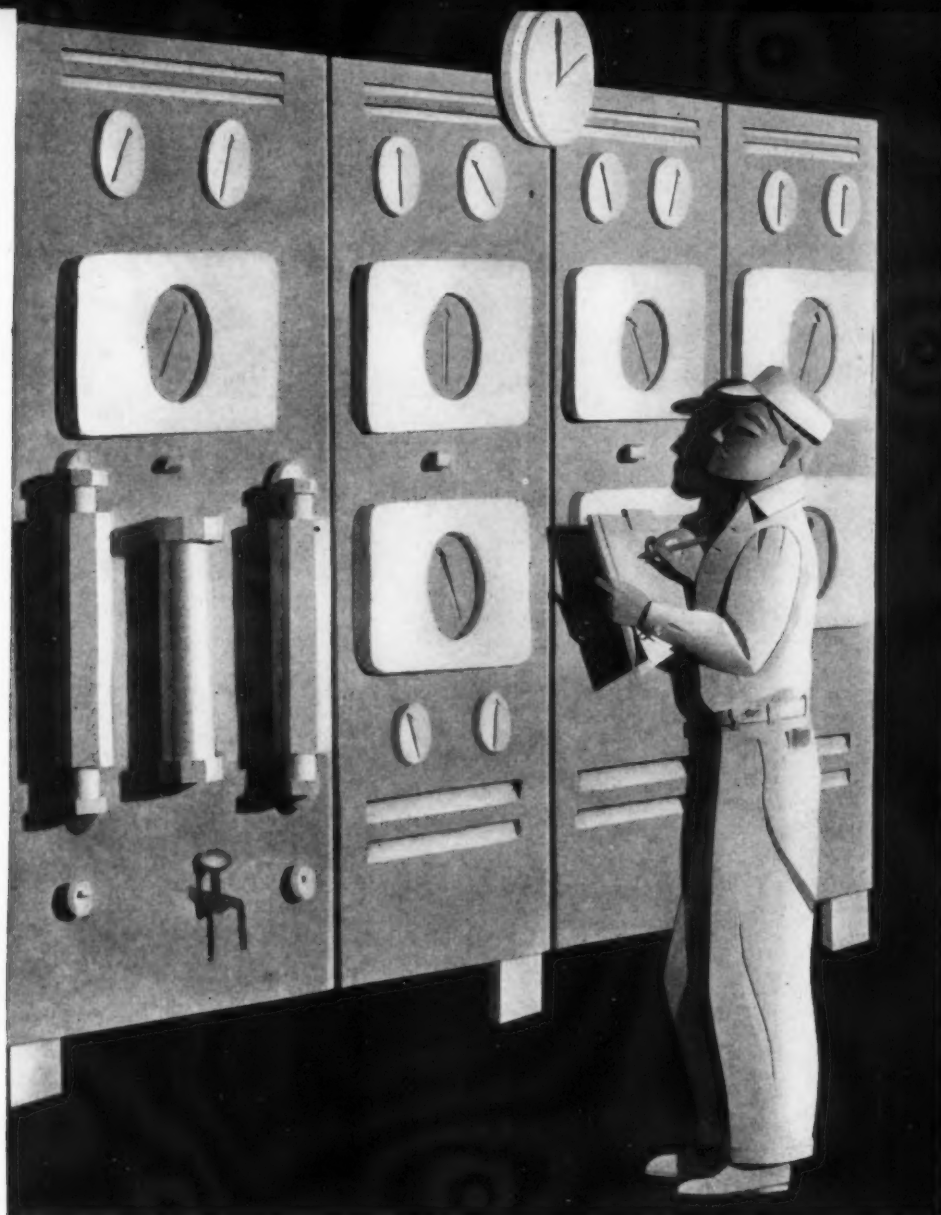
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modern equipment for testing and control helps to maintain

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Depend on Niagara for absolute uniformity.

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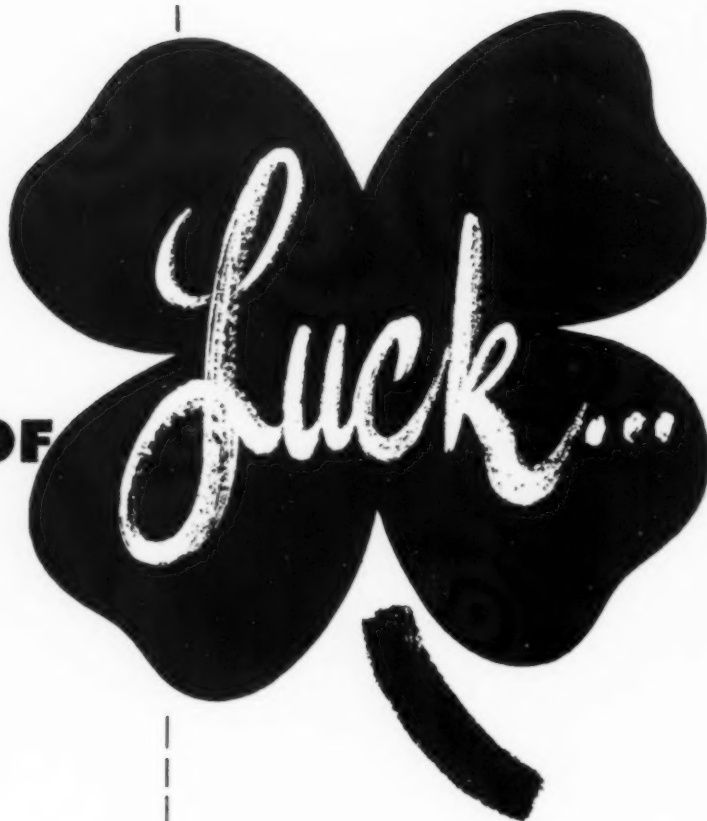
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Felton claims no magic — doesn't depend on chance — to give you the delightful scents that mean so much to your products.

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18B

Say you saw it in SOAP!

September, 1950



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*These new products of Calco research
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*Calcofluor whitening agents have these
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To Be of
Real Service
The Tool Must
Fit the Job!



And that goes for detergents, too...

The detergent is the essential tool of any cleaning compound. That's why compounders go for the unusual "specialty" properties of RENEX.*

RENEX is outstanding because of these valuable features:

1. Low foaming. 2. Superior detergency in any kind of water. 3. Effective over a wide temperature range. 4. Free rinsing. 5. Superior soil suspending properties. 6. Excellent emulsifying action. 7. Compatible with soaps and anionic and cationic materials. 8. Low cost.

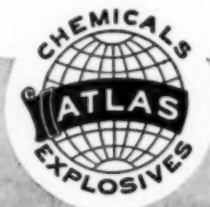
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The famous Atlas SPANS* and TWEENS* are surface active agents that offer a complete range of solubilities in oil and water . . . the correct emulsifiers for any emulsion problem.

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September, 1950

Say you saw it in SOAP!

19

FOR FRUIT AND VEGETABLE WASHING

use mixtures based on

*Nacconol**

AMERICA'S LEADING SYNTHETIC DETERGENT

It's big business, good business, growing business. Each year more and more fruit and vegetable packers are installing fast, automatic cleaning equipment to remove spray residues and surface dirt. This is but one of the many markets open to compounders of mixtures based on NACCONOL.

NACCONOL is the ideal synthetic detergent for fruit and vegetable washing mixtures, because . . .

NACCONOL "wets" rapidly; has better solubility and detergency at the room temperatures generally employed; rinses fast and completely.

Whatever your mixtures, you can offer better values if you add NACCONOL. Arrange now for a dependable supply from America's leading producer of synthetic detergents.

Available in flake, powder and bead form.

For technical help on formulations and prompt delivery of NACCONOL write, wire or phone our nearest office.

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Where fragrance and flavor are sales builders . . . where undesirable odors or tastes must be masked . . . you can count on Monsanto's aroma and flavor chemicals to give you results efficiently and economically.

There are four Monsanto aroma and flavor chemicals — Ethavan, coumarin, methyl salicylate and vanillin. All are made to highest quality standards and even exceed U. S. P. in some specifications. All have the absolute uniformity possible *only* with synthetics, making it easier for you to get uniform results in your formulations. All have "staying power" that holds through hot or cold processing . . . through transportation and storage. Thus Monsanto aromas and flavor chemicals help inspire first purchases . . . help deliver customer satisfaction . . . help create repeat sales.

In addition to these flavor and aroma chemicals, Monsanto offers saccharin . . . *the perfect sweetener* . . . most economical sweetener for drug products. One pound of the soluble powder is equal to 30 pounds of sugar. Saccharin Monsanto will not ferment or spoil. It adds no weight.

Specify Monsanto aroma and flavor chemicals next time you order. Mail the coupon or contact the nearest Monsanto Sales Office for data and a copy of the interesting and useful booklet, "Something About The Senses." Use the handy coupon or contact the nearest Monsanto Sales Office. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1731-J South Second Street, St. Louis 4, Missouri.

Ethavan: Reg. U. S. Pat. Off.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

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COUMARIN MONSANTO
ETHAVAN (Monsanto's
ethyl vanillin)

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Please send: Booklet, "Something About The Senses"; Data,
Ethavan; Data, coumarin; Data, methyl salicylate;
Data, vanillin; Data, saccharin.

Name Title
Company
Street
City Zone State

what other **RED OIL** has all these features?

We've geared our production of Red Oil to meet the increased demand for low titre oleic acids. The oils contain reduced amounts of saturated acids. Unsaponifiables, as well, are kept at a minimum, as low as 1%.

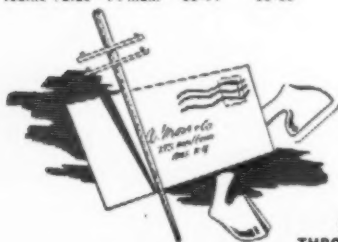
A. Gross' Red Oil is especially interesting to users desiring low solidification points. Particularly valuable is its lower titre soaps with higher soap concentrations.

WHITE OLEINE — USP — This double-distilled Oleic Acid meets USP specifications. Has pale color, low titre and reduced odor. A. Gross' White Oleine—USP—is highly resistant to oxidation.

MANUFACTURERS SINCE 1837

SPECIFICATIONS

Distilled Red Oil (Oleic Acid)			
	2-4° F.	L.C.P.	D.P.
Titre °C...	2°-4°	8°-10°	18°-20°
Cloud Point °F.	36°-39°	46°-49°	63°-71°
Color Lovibond			
1" Red ...	4-7	4-7	4-7
Color Lovibond			
1" Yellow.	20-40	20-40	20-40
Unsaponifiable %	2.5 Max.	2.5 Max.	2.0 Max.
Saponification Value	196-199	196-199	197-200
Acid Value...	195-198	195-198	196-199
% F.F.A. as Oleic Acid	98-99.5	98-99.5	98.5-100.0
Iodine Value	94 max.	88-91	80-85



Southern Industrial Sales Corp.
Tuscaloosa, Ala.

INQUIRE DIRECT OR
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Braun Corp.
Los Angeles 21, Calif.

Smead & Small, Inc.
Cleveland 15, Ohio

J. W. Stark Co.
Detroit 2, Mich.

Thompson Hayward Chemical Co.
Kansas City 8, Mo. (and Branches)

Braun-Knecht-Helmann Co.
San Francisco 19, Calif.

Charles Albert Smith, Ltd.
Toronto 3, Canada

George Mann & Co., Inc.
Providence 3, R. I.

Moreland Chemical Co.
Spartanburg, S. C.

ADVANTAGES

1. Low Titre
2. Reduced amounts of saturated acids
3. Unsaponifiable as low as 1%
4. Makes higher soap concentrations
5. Free of undesirable esters



295 MADISON AVE., NEW YORK 17, N. Y.
FACTORY: NEWARK, N. J.

Add NYTRON

TRADE-MARK REG. U.S. PAT. OFF.

to
PHOSPHATES
SILICATES
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CAUSTIC
and other SODAS
SOAPS

FOR Faster Wetting!
Better Penetration!
Thorough Rinsing!
Improved Detergency!



NYTRON is a totally different type of synthetic organic detergent. Its high and rapid solubility makes

NYTRON go into solution almost instantly, in hot or cold water. It remains chemically stable over a wide range of temperature, acidity or alkalinity.

NYTRON removes oil and grease from fabrics, surfaces and metal parts; and it counteracts hard water difficulties. In addition, **NYTRON** will foam in any normal concentration of acid or alkali, in distilled or sea water, in ice cold or boiling water. Try it—see why **NYTRON'S** *exclusive combination of properties cannot be matched by any other synthetic organic detergent!*

Samples of **NYTRON**—plus informative literature regarding its uses—are available on request. Get a sample . . . try it . . . convince yourself! Mail the coupon now.

SOLVAY SALES DIVISION, Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.

I want to try **NYTRON** and judge its results for myself. Please send me a free sample, plus detailed non-technical information and specific technical data.

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Title.....

Company.....

Type of Business.....

Address.....

City..... Zone..... State.....

SSC-9

Your new products will sell
With the distinguished smell

of **A NORDA ORIGINAL**

A NORDA ORIGINAL makes every new product
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There's a modern, lingering, spicy bouquet
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like the fragrance. Smart women are buying
colognes, toilet waters, creams, lotions, lipsticks,
deodorants, soaps, and many a new exciting
perfume created with A NORDA ORIGINAL.

Test A NORDA ORIGINAL yourself. Try the
smell that will sell your new products.
Ask today for free samples from Norda—
first ever to talk sales scents.

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A more effective soap builder,
water softener, clothes
whitener or...



2

Improving your dishwashing
compound to yield more
sparkling dishes
and glassware

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BULLETIN

BLOCKSON TETRASODIUM PYROPHOSPHATE ANHYDROUS

FORMULA: $\text{Na}_4\text{P}_2\text{O}_7$
STRENGTH: P_2O_5 53% pH of 1% solution 10.2
SOLUBILITY: 75° F 7.5 parts in 100 parts water
150° F 24 parts in 100 parts water

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- Sodium Polyphos
- Sodium Hexametaphosphate
- Sodium Tetraphosphate
- Sodium Silicofluoride
- Trisodium Phosphate, Crystalline
- Chlorinated Trisodium Phosphate
- Trisodium Phosphate, Monohydrate
- Disodium Phosphate Anhydrous
- Disodium Phosphate, Crystalline
- Monosodium Phosphate, Anhydrous
- Monosodium Phosphate, Monohydrate
- Sodium Acid Pyrophosphate
- Light Alumina Hydrate
- Gloss White
- Sulfuric Acid



On this 200-acre site, an hour from the nation's railway hub, the vast BLOCKSON organization is coordinated into a closely knit group under intimate executive supervision for prompt service to American industry, large and small.



★ An ideal soap builder, BLOCKSON Tetrasodium Pyrophosphate enhances the quality and quantity of suds *without increase in causticity*. Softens hard water. Stabilizes dirt suspensions to prevent redeposition on fabrics. Also prevents yellowing from iron in the wash water.

In dishwashing compounds it results in sparkling dishes and glassware free from water spots. Now widely used in metal cleaners. Available in rapidly soluble pure white powder or granules. Mail coupon for sample and detailed bulletin.



BLOCKSON CHEMICAL CO., Joliet, Illinois

Send bulletin on Blockson Tetrasodium Pyrophosphate

☐ Include sample ☐ Powdered ☐ Granular

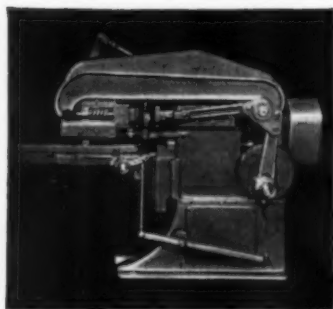
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Company.....Street.....

City.....Zone.....State.....

★ JONES

Specialists in Automatic Soap Presses

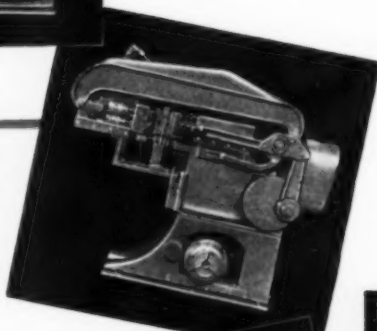


Type K Simplex Press

For toilet or laundry soap cakes of any shape (except highly convex cakes) with side band. Speeds of 120-140 cakes per minute.

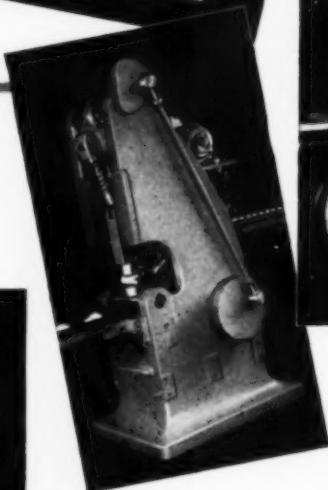
Type K Duplex Press

Applications same as Type K Simplex. Presses two cakes simultaneously. Speeds up to 250 cakes per minute.



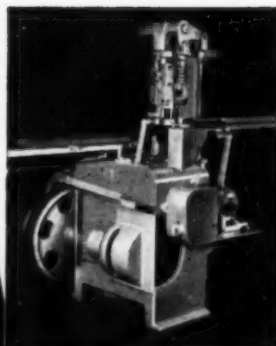
Type R Pin Die Press

For toilet soap cakes of unusual shape, oval cakes, or cakes having highly convex faces, with or without side band. Speeds up to 100 cakes per minute.



Type E Press

For small toilet soap cakes (1½ oz. or less). Speeds up to 200 cakes per minute.

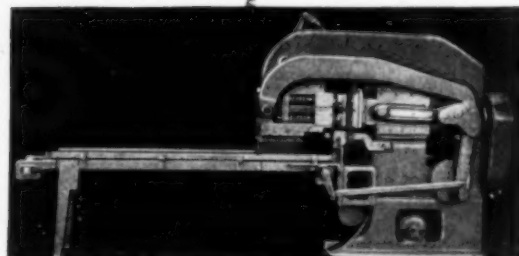


Type ET Press

For small toilet soap cakes with side band. Speeds up to 120 cakes per minute.

Type F Press

For large toilet or laundry soap cakes. Available in Simplex or Duplex Models, pressing one or two cakes per stroke.



R. A. JONES & COMPANY, INC.

P. O. Box 485

CINCINNATI, OHIO

MANUFACTURERS OF JONES TOGGLE OPERATED SOAP PRESSES AND JONES CONSTANT MOTION CARTONERS

SOAPERS today find themselves in a situation differing sharply from that which existed at the beginning of World War II. Fats and oils, with the notable exception of coconut oil, are in better supply than they were at the end of 1941. The industry has expanded its capacity through the building of new plants and facilities and the enlargement of others. The production and consumption patterns of the soap industry's product have changed radically with the growing popularity of synthetic detergents, particularly for household use.

Because of the unsettled conditions in the Pacific, coconut oil, which has not been listed as essential for use in soap by the War Munitions Board, is being stockpiled furiously by the government against the possibility of curtailment of supply. Besides the war threat, the guerilla activities of the communist led Huks in the Philippines are disrupting farm life in the Islands, and could be even more troublesome should the conflict in Korea spread.

The other unfavorable factor in the soap industry's raw material and production supply picture, of course, is the strike in the alkali industry. Regardless of how much fats and oils are available, without caustic, there can be no soap.

Tallow and grease supplies are extremely plentiful. More than 2,126,000,000 pounds will be produced in 1950, as compared with 1,551,000,000 pounds in 1941, according to a recent estimate of the U. S. Department of Agriculture. When we consider that soap consumption last year was reported to be lower than in any of the 19 years on record, as a result of the switch to synthetic detergents, the tallow picture, from the soaper's standpoint, is even more favorable than the figures would seem to indicate. The tallow supply picture could be altered radically if exports from the U. S. were stepped up in the event of the spread of hostilities.

With new soap and synthetic detergent plants coming into operation over the next few months,

it is expected the industry's capacity of five to five and one-half billion pounds of soaps and synthetics may be expanded. On soaps alone, the industry in 1944, believed to be a record year, turned out slightly better than four billion pounds. Last year the figure was just under three billion pounds, with synthetic detergents making up the balance of the total 1949 production of 3,750,000,000 pounds. From these figures a potential production capacity increase of over 40 percent is indicated.

Another factor, although an intangible one, to be taken into consideration in contrasting the status of the industry of today with that of a decade ago is experience. It is only five years since the end of World War II. Most of the men who were required to operate their companies under war time conditions are still in managerial posts. Their experiences during the war period are sufficiently recent for them to be refreshed in war-time operation without too much effort.

From the foregoing, it would appear that the soap and synthetic detergent industry is in better shape to meet an emergency—should the present one intensify—than it was back in 1941 and in the early days of 1942.



EMPTY or meagerly stocked shelves usually devoted to soaps and detergents in grocery stores are reappearing in some sections as in World War II. Not surprising is the fact that the heaviest casualties of the wave of scare buying that was set off by war in Korea are the best selling soaps and detergents. The detergent reported to be the largest seller was nowhere to be seen in several local super markets, a condition reported to be general. White floating soap was equally scarce, with supplies of soap powders and flakes available only in reduced quantities.

Designed to counteract the heavier than normal purchases of Mrs. Housewife, signs have been noted in some retail grocery stores reading:

"Don't be a sucker! There is no shortage of soap, sugar, etc." However, the warnings were universally ignored, as housewives remembering vividly what happened in World War II doubled and tripled their usual purchases of soaps and detergents. Stores normally selling a 24-package case of detergent per day were averaging three a day at this writing.

Under the circumstances, soap and detergent manufacturers cannot keep up with the immediate demand for standard products. Expansion of plants to meet the present temporarily inflated market is obviously out of the question. As a result, we well could see the return of the "get-rich-while-it-lasts" manufacturer with his shoddy merchandise. Mrs. Housewife will pay, of course, and through the nose. But the situation will be of her own making.

* * * * *

WHAT form economic controls will take is still to be worked out. Much will depend upon the outcome of the fighting in Korea, and/or its spread. No revival of the War Production Board has been called for as yet. The present plan seems to be to work through existing government agencies. It is believed that the soap industry will be administered through the Department of Commerce, since it is included in the Department's list of essential industries under chemicals. However, because of the soap and detergent industry's dependence on fats and oils there is some question as to whether or not the Department of Agriculture might not likely be the correct agency.

To avoid duplication of effort, inefficiency, inter-departmental jealousies, and worse, it would seem wise to decide quickly and clearly which agency works with the soap industry. The overlapping of controls, particularly on fats and oils, during World War II was an unhappy arrangement that should be avoided at all costs in the future.

The present plan seems to be to have the Army outline its requirements to the Munitions Board, which in turn determines availability, plant capacity, need for stockpiling, etc. The soap industry has two representatives on the chemical industry advisory sub-committee on fats and oils of the Munitions Board. Then there is an overall planning agency, to consider military and civilian

requirements. This is the National Security Resources Board.

The administrative functions exercised in World War II by the War Production Board, Office of War Manpower, etc., are to be carried on by regular Government departments: the Department of Commerce being responsible for production, the Department of Labor for manpower problems, the U.S.D.A. for food and the Department of Interior for petroleum and fuels.

While such a set-up looks logical on paper, it raises some grave doubts in the minds of those who have had to deal with these departments. For example, does anyone seriously believe that the Department of Commerce is equipped to handle the production problems of a single plant, let alone a whole industry or all of industry? Personally, we would prefer to have the Government outline its requirements to industry to meet the current situation and then let the initiative of free enterprise do the rest. Let's have no commissars, economic or political at home, while fighting abroad the very system that breeds them.

* * *

IMPORTED soda ash! We thought that one went out the window at the turn of the century, but here are American consumers trying to bring in ash from England, Holland, Belgium or anywhere else they can get it. However, labor troubles on the docks abroad are not helping to facilitate the movement of this much-needed basic material to the U. S. In the meantime, the acute scarcity of soda ash is interfering seriously with many plant operations in America, not excepting the production of soaps, cleansers, and detergents.

Hopes that the strikes in American plants would be settled long before this, have evaporated, and in their place has come the grim realization that ash consumers are not only up against it right now, but will be for some months to come. Any surplus stocks which may have been kicking around the market two months ago have been pretty much cleaned out by the frenzied search of consumers. That half of the alkali industry which is still operating in early September finds its twenty-four hour production efforts inadequate to meet demand. So, a few shiploads of foreign ash would be extremely welcome right now in these United States!

Soap Sampling Door-to-Door

By **D. L. Harrington**

Reuben H. Donnelley Corp.
Chicago

THE most primitive of all advertising techniques—door-to-door sampling—has developed into almost a science since the war.

With it the advertiser can limit his efforts to his best prospects; he can adjust his program (and his costs) precisely to the results he wants to achieve; can combine sampling and couponing in a way to enhance the effectiveness of both. He can even speed up normal consuming processes to shorten the lag between the sampling and the time when results of the effort are felt and can be measured.

An example of the latter was furnished in a recent test-sampling by Donnelleys of "Cheer" detergent in a number of major cities. Our men opened the packages as they handed them to the housewives—a simple enough device. But it worked because a woman feels compelled to use an opened package without delay.

Mention of this new Procter & Gamble detergent reminds me to point out that while sampling is widely used by the soap companies, many other types of goods are successfully sampled each year on a door-to-door basis. Among them are drug products and all manner of packaged foods.

Soaps are peculiarly well adapted to sampling for a number of reasons. They are universally used. Every home in the U. S. is a customer or prospective customer for most of the major products of the soap makers.

Moreover, since soap products are low in unit cost, it is feasible to



distribute sizeable samples for promotional purposes. Also, the package or bar of soap is used up fairly soon and if the housewife likes the product she will buy more of it in a reasonably short space of time.

Millions of dollars are spent in radio, magazine, and newspaper advertising every year in *hopes* that the housewife will be induced to try the soap so advertised. But every dollar expended in a sampling campaign assures the trial beyond question. I don't want to pit one advertising medium against another, and I'll cheerfully admit that the manufacturers know what they are doing when they spend those

millions in radio, the magazines, and the newspapers; but I do want to make the point clear that they also know what they are about when they sample their products.

To most people sampling is simply sampling—that is, giving the prospective customer chewing gum to chew, or cigarets to smoke, or a package of soap with which to do the dishes.

To us sampling is not merely or solely a method of getting the prospective customer to try the product. We regard the trial only as a means to an end. We are interested in ends—sales upcurves, rising consumption,

sustained activity in retail outlets, satisfied wholesale distributors.

Special Techniques

THAT is why we have developed (often in cooperation with our clients) numerous special techniques in sampling which make it much more certain that the means will attain the desired ends. These techniques will be described in the order of their complexity. The importance of some of the details may not be apparent at once to the reader, but in the eyes of men long experienced in this work and to advertisers spending substantial amounts of money on the campaigns, they are very important. Strict adherence to the detailed methods decided upon is vital to the success of the sampling campaign.

In occasional campaigns it is desired not to disturb the occupant of the house or apartment, and yet the sample being distributed must be put in the safest possible place where it will be quickly discovered. Thus, between the doors (if there is a screen or storm door) is the best "safe leave." Where there is no second door, the milk chute is preferred. Lacking that, the distributor selects a place on the porch where the sample cannot be seen from the street—as behind a post. Sometimes he will conceal it under a bucket or chair or other object on the porch.

When the value of the sample is considerable or when increased impact from the campaign is desired, the door bell is rung by the distributor. Once the bell is rung, various procedures of delivery are followed. It will be seen that there is hardly a limit to the elaborateness of the presentation which can be made in a campaign of this sort.

When the bell is rung, the distributor may not wait for the housewife to appear. This is an economical method, because relatively little time is consumed, and it has been ascertained that approximately 70 per cent of the doors are opened and the sample taken in at once. We call this the "ring and leave" method.

A second (increasing the time spent by the distributor and therefore

Soaps are particularly suited for door-to-door sampling because they are used universally. Sampling techniques are described. Grocery tie-ins are important.

the cost) is the so-called "ring and hand in—no message" method. Here the distributor rings the bell and waits a pre-determined number of seconds—sometimes 20 seconds, sometimes the interval is as much as 40 seconds. When the door is opened, no comment is made by the distributor except perhaps a statement such as "This package of Cleano soap is free," as he hands it in.

If the ring is not answered, the package is left on a "safe leave" basis, or a two-for-one coupon or other special offer is left, so that the housewife can get a sample free or at a bargain price at her neighborhood store. Handing the sample to the housewife even without a message has, of course, far greater attention-getting value than merely leaving it, with or without ringing the bell. Similarly, the longer the waiting period, the more prospective customers will be reached and influenced by the campaign. Donnelley distributors are provided with timing devices set for the specified waiting period so that if instructions call for a 30-second wait, 30 seconds will elapse and no less.

Most Elaborate Method

THE most elaborate and most time consuming and expensive, as well as the most effective method of distribution is the "ring and hand in with message" technique. It requires a memorized sales talk delivered by the distributor in which he calls the housewife's attention to the main features of the article. The sales talk is prepared with all the care given to any advertising copy, and the distributors, selected for their speaking ability as well as for their appearance, are drilled in the talk until their delivery is faultless.

By use of the "ring and hand

in with sales talk" method, elaborate presentations have been given from house to house. Face powders and lipsticks, for example, have been sampled, each housewife being given the color most suitable to her complexion.

In all of these methods of sample distribution, one or more coupons usually are left with the sample. Generally these are good for 10 to 20 cents on the purchase of other products in the advertiser's line. The advertiser not only samples one product, but for a slight additional cost, promotes the sale of other items. One of the coupons may enable the housewife to purchase an additional package of the sampled product at reduced cost, the idea being to make as certain as possible that she will use a considerable quantity of the product, thus breaking her established habit, assuming that she has been using a competitive brand.

Retail Tie-in Vital

SUBSIDIARY to the sampling campaign, but a vital part of it is the detailing of retailers in the sampled area. Often, as has been seen, one or more coupons are distributed with the sample. When the distributing crews are in a dealer's neighborhood, a crew member or special detail man calls on him to inform him of the campaign, to put up redemption banners and product displays, and to inquire if the product being promoted is in adequate supply or if the dealer wants to see a salesman. The dealer, knowing that within 24 hours he will feel the effect of the campaign, is ready to stock the product. He knows that it will move out of his store even before he can be billed for it, thus tying up none of his capital. For the same reason he is usually willing to allot more floor space or other display space to the product than he ordinarily would. The

importance of complete store detailing in connection with sampling and couponing can scarcely be over emphasized.

We recommend equipping the distributors with large, round buttons, carrying the name of the product being sampled, to be pinned to their caps, shirts, or jackets. They serve a number of purposes—calling attention to the campaign and to the product and exciting interest in them. Our distributors are always neatly and appropriately dressed in uniform caps or hats, shirts, ties and so on. During severe weather last winter the crews were supplied with special hoods. Uniforms for the distributors which advertise the product are effective but expensive.

I said earlier that soap is particularly adaptable to sampling because everybody uses it. The reader must not infer from this that only universally used products can be sampled effectively. In door-to-door sampling a high degree of selectivity can be attained. Not all campaigns blanket a city. Since Italians eat few pancakes, a campaign sampling pancake mix would ordinarily omit areas predominantly Italian.

My company has charted most of the cities of the country showing how they are divided not only racially but also on the basis of ability to buy. The latter is measured by rents, ground values, etc.

Maintenance of uniform stand-

ards of sampling as the crews work large areas often hundreds of miles from headquarters makes certain managerial safeguards necessary. Our methods are extremely accurate and thorough—based as they are on our years of experience in distributing telephone directories. Directory distribution calls for the highest degree of speed and accuracy because every telephone subscriber who fails to receive his new book will be heard from immediately.

Supervisory Set-Up

TO ASSURE the same standards in product sampling, we put a non-distributing crew manager in charge of each team of four men, a supervisor over each three such teams, and an assistant operating manager over each group of five to seven supervisors. Our system of control is so complete that we know what man sampled a given house on a given street in any city covered.

Over and above the operating managers on a job we have what we call our "head office inspection crews" who are responsible only to myself as vice president in charge of our merchandising division. The crews inspect every job to make sure that detailed instructions are carried out. Their presence is never known to the working crews or even the supervisors. As a matter of fact the inspectors observe rules not unlike those controlling the movements of baseball umpires. They are not allowed to fraternize with the

distributing personnel or the client's field men. They are not permitted to travel on the same trains or to stop at the same hotels. Their inspection reports are sent directly to me as well as to the divisional managers.

In general it may be said that sampling is practicable at any time of the year, but this of course depends on the article being sampled. For general merchandise the least desirable months in the northern tier of states are December through February. (December has proved to be a very good month in California.) November and March are not so desirable as the months of April through October.

Results of sampling campaigns are, of course, the secrets of our clients. They keep couponing redemption records and carefully watch the results in increased sales. They know how sampled areas compare to non-sampled areas in sales volume.

Even without this confidential data, it is possible to gauge the effectiveness of sampling. It is no mere coincidence that the sampled brands of soaps are at the top of the lists in the consumer analyses and pantry polls furnished by various metropolitan newspapers. It is obvious, moreover, that if the soap companies did not find sampling profitable, they would not be the biggest samplers in the country.

What could be more effective than giving the housewife a free trial package of the product you want her to buy?

About the Author . . .

D. L. HARRINGTON, the author of the article which appears on this and the preceding two pages, is vice-president of Reuben H. Donnelley Corp., Chicago. The firm is one of the leaders in the sampling field, and also a large factor in direct mail advertising, contest judging and publishing directories.

Mr. Harrington has a "head office inspection corps" which reports only to him. His company employs as many as 1000 to 1200 in the sampling department, of which Mr. Harrington is in charge.

The Donnelley company handled the sampling of "Shasta" cream shampoo of Procter & Gamble. In that job, over 10 million samples were distributed throughout the mid-west and east. "Tide," P&G's extremely successful heavy duty synthetic detergent was widely sampled before it actually went on sale in stores, which may account for its position as the number one brand in the field.



D. L. Harrington



Procter & Gamble photo

Toilet Soaps

MANY changes have taken place in the production of toilet soaps during the past decade. While in most cases the fundamentals of the original French milling process have been preserved, a considerable number of important improvements—and what may best be described as enforced adjustments to altered conditions—have been made.

Let us first of all consider the soapmaker's changed outlook on raw materials. W. H. Simmons was truthfully reporting the position in 1908 when he wrote (1): "Only soap made from best quality fats is usually milled, a suitable base being that obtained by saponifying a blend of the finest white tallow with a proportion, not exceeding 25 per cent, of coconut oil." Some twenty years later, English soapmaker T. Penny told the Bristol Section of the Society of Chemical Industry (2) that "mutton tallow should never be used in toilet soaps because of its tendency to rancidity." He went on to

disparage palm kernel oil, as compared with coconut oil, and to insist that "only fresh, pure raw materials should be used." During the same period, the utilization of hardened oils for soapmaking was the subject of prolonged controversy in the U. K., Germany and Russia, and doubtless also in the U. S. A.

It would, however, be unjust and incorrect to describe the pre-1940 literature on soapmaking fats and oils as inaccurate or misleading. The truth is that supply conditions and standards of quality have both undergone drastic modifications since that date. "During the war period itself," state the authors of a standard 1949 text on soapmaking (3), "a number of changes were forced on the typical kettle charge. . . . Consumption of coconut oil dropped to only six or seven per cent of total soap fat and oil use. The relative importance of inedible tallow and grease mounted. Use of palm oil dropped off sharply.

. . . Olive oil supply sources were cut off. . . . Consumption of soybean oil by the soap industry dropped. . . ."

Changes in Fat Use

NATURALLY enough, the end of the war brought many of the short-supply materials back into the picture again, but the most significant factors operating in this matter of available soapmaking fats and oils are nevertheless the following:

- (a) The prevailing world shortage of edible oils, coupled with a variety of economic realignments in the producing areas;
- (b) the corresponding necessity for the soap industry, sectionally at first perhaps but eventually as a whole, to utilize an increasing proportion of inedible oils; and
- (c) the consistent improvement in quality of hydrogenated oils, distilled fatty acids, and other

replacement materials.

It is not unusual to discover that the problem itself contains the seed of its own solution. While the finest natural raw materials were freely available, soapmakers used them for their best quality products and, indeed, insisted that no other materials could ever give equally satisfactory results. Nowadays the same soapmakers somehow contrive to maintain a high quality, though in doing so they are forced to handle a considerably modified, wider and less edible range of fatty materials. This is possible partly because of research on fat bleaching and the production of better grades of bleaching earths, and partly because of the great advance in the design and use of distillation plants.

The basic kettle charges listed

lation" of toilet soaps that have been brought about during the past forty or fifty years:

Distilled teaseed and shea nut fatty acids are also used. One to two per cent of rosin and other minor constituents may be present. These examples reflect, in a general way, the changes that have come about in the availability and acceptance of fatty materials for soapmaking.

One of the most widely popular, world-distributed brands of toilet soap was subjected to a fairly exhaustive analysis in 1928 (4). At that time a pioneer soap of its kind, it was—and still is—of firm, attractive appearance, refreshingly perfumed and perfectly finished in uniform white cakes. Having excellent lathering properties and satisfactory durability

well balanced mixture of 25 per cent coconut oil, five per cent hardened fat, and the remainder high grade tallow, bleached bone grease or palm oil. The analyst reported that "the exceedingly white color was due to the raw materials and the method of saponification, assisted by the addition of an appreciable amount of zinc oxide." The analytical figures were as follows:

	per cent
Fatty acids	80.6
Fatty anhydrides	78.1
Total alkali	10.0
Moisture	8.8
Free alkali as Na ₂ O	< 0.02
Alcohol insolubles	0.5
Glycerin, perfume, etc. (by difference)	2.6

The mean molecular weight of the fatty acids was 258, the titre 37.5° C., the percentage of solid acids separated by the Twitchell method 46.8, and the iodine value of the solid acids 8.6.

It is probable that, at the time of writing, the coconut oil would be replaced in the U. K. by palm kernel oil, acid oils of distilled fatty acids of the coconut or palm kernel types, either alone or in suitable admixture.

By Joseph M. Vallance and F. V. Wells, F.C.S.

Part I

below may serve to indicate some typical modifications in the "formu-

(medium slow wearing properties during use), it appeared to consist of a

Typical Kettle Charges of Past 50 Years

		Per Cent
circa 1900	(a) coconut oil, Cochin	25
	tallow, finest beef	75
	(b) coconut oil	24
circa 1925	tallow, beef	60
	olive oil	16
	(c) lard (hog's fat)	25
	tallow, best beef	35
	palm oil, bleached	20
circa 1935	coconut oil	20
	(d) coconut or palm kernel oil	20
	blended palm oil	25
	peanut oil	25
	mixed tallows, prime quality	35
	best white bone grease	10
	(e) coconut oil	27
since 1945	hardened, refined whale oil	8
	bleached bone grease	25
	palm oil, bleached	40
	(f) palm kernel oil	15
	coconut acid oil	5
	tallow fatty acids	40
	distilled bone grease fatty acids	40
	(g) distilled palm kernel fatty acids	10
	palm kernel acid oil	10
	hardened refined whale oil	5
	technical bone grease	15
	tallows, prime mixed, non-edible	60

Storage a Problem

NOW that the soapmaker has been forced to use many lower, non-edible grades of fatty materials, which sometimes require pretreatment in order that they may be brought up to standard, the problem of raw material storage has become intensified. The wide range of acid oils available, for example, as the end products of the acid splitting of edible fat residues, may exhibit 50 to 80 per cent or more of free acidity, together with one or two per cent of impurities. These oils, as well as distilled fatty acids, are preferably used up as quickly as possible, in order that they do not deteriorate during storage. At all costs, storage in iron tanks or drums must be avoided, as this will inevitably give rise to discoloration. Delivery and storage are best carried out in stainless steel or nickel alloy drums or tanks, or in steel drums well lined with acid-resisting finishes. Where large stocks are kept, tanks fabricated of specially resistant stainless steel, monel metal

or other nickel alloys are used.

Much has been written concerning the saponification or neutralization of fatty acids with alkaline carbonates, and there is no doubt that in certain circumstances such a procedure can be amply justified on economic grounds. The fact remains, however, that the majority of toilet soapmakers who produce their own milling base still currently adhere to 100 per cent saponification with caustic soda lye—the extension of the boiling period and other complications arising with carbonate treatment being considered adverse factors when the total kettle charge contains neutral fats as well as split or distilled fatty acids. Carbonate saponification, moreover, tends to give a darker soap than does caustic saponification.

Kettle charge computing depends, of course, not only upon the relative availability and price of raw materials but also on the desired characteristics of the finished soap. The usual properties required of a toilet soap are good color, reasonably free lathering in both cold and hot water, and a fair degree of hardness or durability. It is sufficiently well known that the properties of mixed soaps faithfully reflect those of their constituent fatty acids, but what is not yet so widely appreciated, perhaps, is that subsequent processing may radically modify such "inherited" properties. This point we must return to later. Let us for a moment, however, consider a typical milling base of proven merit, consisting of 25 per cent coconut oil and 75 per cent prime beef tallow. This combination, in terms of fatty acids, may be approximately translated into:

	per cent
Lauric acid	13
Myristic acid	6
Palmitic acid	21
Stearic acid	16
Oleic acid	37
Minor fatty acids, etc.....	7

Here the lauric and myristic acids give soaps notable for their ready lather formation and excellent solubility, even in hard, cold water. Oleic acid soaps are characterized by a much slower lather formation, the bubbles being smaller than those of the C_{12}

and C_{14} soaps and also more lasting. A slow, close lather formation is likewise given by the palmitic and stearic soaps. Hence a balanced blend of coconut oil and beef tallow produces a soap that lathers neither too openly nor too sluggishly, and is both sufficiently soluble in cold water and not too wasteful in hot.

Study of the fatty acid constituents of animal and vegetable fats shows that the most obvious substitute for coconut oil is palm kernel oil, inasmuch as their respective lauric and myristic acid contents are approximately 48 and 18 for coconut and 47 and 14 for palm kernel. Significant quantities of these particular fatty acids unfortunately are not present in other common fats and oils, although the comparatively rare babassu and murumuru oils contain about 46 and 43 per cent respectively of lauric and 20 and 37 per cent of myristic acid. On the other hand, palmitic acid is present in considerable amounts in palm oil, tallows, cottonseed oil and marine oils, and it is in fact the most abundant and widely distributed of the saturated fatty acids. Stearic acid is also widely distributed, its chief sources being the tallows, shea butter and hardened fats. Oleic acid, present in every oil, is particularly predominant in teaseed, olive, peanut, sesame, palm, corn, cottonseed, soybean, whale and fish oils, as well as in tallows, lard, shea butter and bone fats. Of the other unsaturated fatty acids, linoleic is chiefly found in sunflower, soybean, corn, sesame, linseed and peanut oils (of the soapmaking oils).

Study of the wetting, lathering and other detergent properties of the individual fatty acid soaps has increased in practical value since distilled fatty acids have become widely available commercially. Efficient wetting

and lathering action begins with the soaps of C_{12} (lauric) and C_{14} (myristic) saturated acids, which are both good detergents in cold water. From C_{16} to C_{20} we note that the optimum detergent action is shown in hot water, which explains why palmitic and arachidic acid soaps (and the soaps of oils containing significant proportions of these acids) are usefully blended with the C_{12} and C_{14} soaps, to give finished products of good solubility and effectiveness in a wide temperature range. When we consider the unsaturated fatty acids, we find that soaps of oleic acid exhibit the best wetting performance, followed by the linoleates. Ricinoleic soaps, though very useful in other directions, are not good washing agents; hence the very limited applicability of castor oil.

Hard Fats Wet Poorly

ACCORDING to the separate studies of Sadgopal and Miku-mo (5), soaps made from hardened fats possess comparatively poor wetting properties. This is, in fact, what one would expect, in view of the high stearic acid content of hydrogenated oils, which frequently runs to around two-thirds of the total f. a. content. Sodium stearate is a dry, white, friable substance which contributes to the hardness and general detergent activity of soaps but is poorly soluble and forms practically no lather. Tallow, except for its deficiency in C_{14} and its lack of C_{12} acids, may well be regarded as an ideally balanced soap stock, with its very approximate ratio of six parts of palmitic to five of stearic to nine of oleic. Somewhat similar, though with a deficiency of stearic acid, is the constitution of palm oil; whereas hydrogenated oils show a very high proportion of stearic acid and around 30 per cent of palmitic

A British review with comments on changes in formulation of toilet soaps during the past fifty years. The effect of war and supply conditions of fats has been marked.

acid, making them suitable only for admixture with softer stocks.

It will be sufficiently obvious from the following table that beef tallow may be replaced, if desired, by a blend of a suitably high proportion of bleached palm oil with smaller amounts of hardened whale oil and peanut or olive oil:

	Palmitic	Stearic	Oleic	Linoleic
Beef tallow	29	24	45	5
Palm oil	43	3	43	9
Hardened whale oil	28	63	—	—
Peanut oil	8	6	60	20
Olive oil	8	2	83	5

Similar comparisons of all other available soap stocks may profitably be made. As a general rule, the ideal charge should contain not less than 20 per cent coconut oil or its equivalent, not less than 70 per cent tallow or its equivalent, not more than 15 per cent of hydrogenated fats, and optionally one or two per cent of rosin. The fact should be noted, however, that the hydrogenation of marine oils is nowadays carefully controlled and not carried to completion. An improved hardened oil may well diverge widely from the above figures and may much more closely approach the essential properties and characteristics of tallow. Only a slight degree of hydrogenation is necessary to remove the fishy odor from marine animal oils. Soaps from partially hydrogenated oils exhibit improved solubility and fair lathering properties.

The relative hardness and solubility of soaps made from different fats and oils are important factors to consider when blending soap stocks for toilet soap making. Hardness is chiefly conferred by coconut and palm kernel oils, which also give the most readily soluble soaps. Hydrogenated oils also give hard soaps, which are usually distinguished by poor solubility. Contrary to the usual published statements, tallow and palm oil do not yield particularly hard soaps (6). Oils containing high proportions of oleic acid, and especially of acids more unsaturated than oleic (e. g. cottonseed, linseed and soybean oils), exhibit increased softness.

For all practical, as well as scientific purposes, there seems little point in considering here such arbitrarily

selected "guidance factors" as the I. N. S., S. R. or S. T. numbers or similarly inspired hardness numbers, all of which have been arrived at arithmetically on a purely empirical basis and are no substitute for a proper, if somewhat limited and elementary knowledge, of the chemistry and physics of the subject.

Penetrometer and cutting-wire plastometer tests fully confirm these

MILLING IN PART II.

Part I of "Toilet Soaps," which appears on this and accompanying pages is to appear eventually as a chapter in a forthcoming book by Messrs. Wells and Vallance. Part II, which we will publish in October, will cover milling and plodding of toilet soaps. Other phases to be covered include improving quality and cutting, stamping and wrapping.

statements. The hardness or "yield value" increases as the percentage of coconut oil and other hard soaps is increased, while it decreases with higher concentrations of oleates and linoleates. A significant fact disclosed by Vold and Lyon (7) is that the hardness of soaps is very sensitive to electrolyte content, first decreasing to a minimum at about 0.7 per cent of sodium chloride and subsequently increasing with further increase in salt concentration. This confirms the conclusions long arrived at empirically by practicing soapmakers.

Soap Solubility

THE ready solubility of soaps of the coconut oil class has been commented upon, *inter alia*, by Archibald Rayner (6), who also mentions the fact that tallow and palm oil soaps are not even readily soluble in warm water, although their solubility in the temperature range of 100°—110° F. is most remarkably increased. Rayner goes on to observe that the durability (or rate of wear in use) of toilet soaps, as compared with similarly constituted,

unmilled soaps "has been found to be surprisingly low, particularly in cold water, and it is suggested that this is caused by rapid disintegration due to the physical condition within such a soap, and in hot water the wastage still compares unfavorably when the greater actual soap content of toilet soaps is taken into consideration."

What Rayner intended by "physical condition" is not further defined in his paper, but despite his peculiarly unfavorable attitude to "wastage," which is surely inseparable from ready solubility and a desirable wealth of lather formation (obtainable in his milled soap but not in his similarly constituted unmilled soap), his observations nevertheless accord fairly closely with the conclusions arrived at a few years later by such workers as Ferguson, Rosevear and Stillman, whose studies of soap phase identification problems were enormously elucidated and developed by the use of X-ray diffraction pattern techniques.

An improved understanding of the chemistry of the fats and oils, and more particularly of the fatty acids and their soaps, was the first step towards a logical appreciation of soap-making. Examination and comparison of the wetting, lathering and other detergent properties of the fatty acid soaps was the second step. Then, thirdly, came the revelation of the existence of distinct soap phases, as a result of X-ray diffraction study. This latter development represents the third and boldest step forward towards a complete knowledge and control of soapmaking techniques.

Theoretical aspects of the crystalline phase structure of soaps, some generally accepted and others still of a controversial character, are vastly too involved to be summarized adequately in simple terms. The fact is that certain phases are clearly perceptible in X-ray diffraction patterns, and of these phases probably the three most important from the practical point of view are the so-called beta, delta, and omega (or gamma) forms. The beta phase, predominant in milled and plodded toilet soap, is characterized

(Turn to Page 139)

Textile Soaps

By Milton A. Lesser

EACH year millions of pounds of soap are used in the process of changing raw fibers into finished fabrics. Because there are a number of different steps in this process and because the fibers may be of animal, vegetable or synthetic origin, several types of soap are required by the textile industry. Moreover, under the stimulus of growing knowledge and the competition from synthetic detergents, improved soap and soap products are being developed for the textile industry.

As noted by Schwartz and Perry (1), until about 25 years ago all wet textile processing was geared to the use of soaps. This picture has changed, with the synthetic detergents cutting into the field once dominated by soaps. Generally speaking, however, it appears that a balance has been established between soaps and the synthetic detergents in the various textile operations (2). Indicative is Borghetty's (3) observation that, in re-

cent years, he has not seen a single textile mill that does not use at least one synthetic surface active agent, nor one mill that does not use soap.

Although many points are being clarified in laboratory and plant tests, there remains considerable misunderstanding concerning the relative merits of soaps and detergents. As pointed out by Borghetty (4), some of this confusion is attributable to the commercial advertising which attempted to indicate that synthetic detergents are superior to soap under all conditions. Were this the case, says he, there would not be such a host of patents dealing with methods for increasing the viscosity and lowering the solubility of synthetics in an endeavor to approximate closely soap characteristics.

Soaps vs. Synthetics

IT is well known (5) that soaps work best when they are used with soft or conditioned water, in a mildly alkaline state and at moderate to high temperatures. Synthetics are superior with respect to stability to acids and to hard water and they are more versatile. Thus, because of their stability to acids, synthetics can be used for the dyeing of wool, an operation in which soap cannot be used (6). On the other hand, an important disad-

vantage of most synthetic detergents, as contrasted with soap, is the difficulty of separating the valuable wool greases from the spent scouring liquor used to clean the fleece (1).

Water hardness is, of course, one of the most important factors favoring the synthetics. Nonetheless, ways of surmounting this difficulty in the case of soap have proved quite feasible. The most obvious way of preventing the formation of insoluble soaps is the use of water softened by passage through Zeolite or ion-exchange resin systems. Where it is necessary to use hard water, there are many chemicals which will prevent precipitation of insoluble soaps during textile processing. The polyphosphates have proved quite useful in this connection. Indeed, one expert (6) feels that the soap industry has overlooked the potentialities of these sequestering agents as well as those of the newer, more efficient chelating agents, such as the sodium salt of ethylene diamine tetraacetic acid. He remarks that by their proper use (e. g., in the rinse waters), these sequestering compounds can help to avoid the hard water drawbacks of soaps.

Although the synthetics possess a high degree of versatility, soaps may also display this characteristic. A case in point is the fact that soap is more versatile as an emulsifying agent than many of the individual competing synthetics. When used under proper conditions, soaps are among the best of all emulsifying agents, whereas those synthetics which are good emulsifiers are generally poor detergents (5).

Many factors must be taken into consideration in determining the comparative detergent value of soaps and synthetics. However, as remarked by Armstrong and his associates (7), it has long been recognized that synthetic detergents are deficient in their ability to suspend dirt and prevent its redeposition. Although most of them are superior to soap as wetting agents and in their resistance to hard water, they are not generally recognized to be highly effective scouring agents. Where a strong cleansing action is required, say these textile workers, and

where water hardness is not a problem, soap is nearly always employed.

Terse, but equally indicative is Borghetty's (6) statement that, "Soap in its 'as is' condition is still the best detergent." After expressing a similar view, Schwartz (5) makes the significant observation that since the well established scouring procedures and equipment of the textile industry were developed around soap, they utilize soap to its best advantage. Hence, soap is not likely to be displaced unless the processes are changed or the price situation is drastically altered.

Soap-Synthetic Mixtures

SINCE soaps and synthetics possess superior characteristics under certain conditions of use, it is logical that attempts should be made to prepare mixtures which take advantage of these properties. Noting the importance of this trend, Schwartz states that it is possible to add relatively small proportions of certain types of synthetic detergent to soap and obtain a product which has good hard water resistance and increased detergency. The feasibility of using such mixtures, some of which show a synergistic detergent effect, is indicated in both the technical (8,9) and patent literature (10).

Serving as wetting, emulsifying and dispersing agents, various soaps and soap-utilizing combinations find many applications in the textile industry. Soaps are important as scouring agents to remove grease and dirt from raw wool, and spinning oils and processing-acquired soils from wool piece goods and yarn. They are also employed in the fulling or milling of wool fabrics. Soap is employed in the kierboiling of cottons and in the boil-off of cotton and synthetics, including hosiery. The soaping of dyed and

printed fabrics helps to remove excess dye, brighten colors and sharpen prints. In the finishing of cottons, soap helps to apply a soft hand to the goods and in the case of synthetics it may be used to provide "scroop." Silk degumming is an established use for textile soaps. In other applications, soaps find employment in textile lubricants, in lustering and delustering preparations and in other specialized products used in textile mills.

Obviously different types of soap are needed in these varied applications. However, certain kinds of textile soap, like olive oil soap or palm oil soap, can be used in a number of operations, but the amount and method of use must be adjusted to the specific phase of treatment and the type of fiber being treated. Thus, as noted by one authority (11), scouring compositions and scouring conditions which will work well on one fiber may be quite useless on another.

There are certain basic requirements expected of all textile soaps. As summarized by Collingridge (12), such soaps should contain nothing that will injure the fibers, deposit impurities in the fibers or make the soap difficult to rinse out. In addition, it is generally agreed that a textile soap should have good emulsifying action, low degree of hydrolysis, non-rancidity, good solubility and excellent rinsability.

In his discussion of textile soap production, Collingridge states that soda soaps, potash soaps or mixtures of the two kinds all enter into consideration. They may be made as cold process, semi-boiled or full boiled-settled soaps. The fats and oils are generally the least expensive of their particular kind. The fatty ingredients include tallow, bone grease, house grease, unbleached palm oil or lower

grade coconut and palm kernel oils, olive oil foots, olein, corn oil and cottonseed oil and foots. Sometimes potassium carbonate, soda ash and sodium silicate are added, but he feels that the use of rosin is inadvisable.

This authority also remarks that, because of their composition, plenty of mixing and crutching is needed in the production of textile soaps. Frequently the finished soap is run off directly into barrels, but some manufacturers dry it to a low moisture content. Some cut the soap into bars or make it available in the form of chips or flakes. Sometimes a soap may present a mottled appearance and such products may be referred to as "fig" soaps. In passing it should be noted that potash fig soaps made from refined tall oil are produced for low cost textile finishing, where a very low titer soap is needed.

Collingridge feels that it is unfortunate that there is no hard-and-fast limit for the free alkali in soap. In his opinion the most logical procedure is for the textile processor to insist on a relatively neutral product to which alkalies may be added as required. More recently Gillam (13) similarly observed that by purchasing a neutral soap, a product of measurable uniformity will be obtained. The mill can then add known quantities of materials to give the conditions needed in a specific operation.

Titer a Factor

IN evaluating a soap, most textile men consider not only its actual soap content but its titer as well. This is quite understandable since the titer (solidifying point in degrees Centigrade) of the fatty acids used to make a soap has a definite influence on the properties and specific applications of the soap. In general, the higher the percentage of liquid fatty acids, the lower the titer. Conversely, the higher the titer, the higher the proportion of solid fatty acids. Representative of low titer products are olive oil soap and red oil (olein) soap with titers ranging from 8° to 20°. Tallow and palm oil soaps are typical of high titer values ranging above 38° (14).

Titer values provide consider-

Under the stimulus of competition from synthetic detergents in a field in which it once was used exclusively, improvements in textile soaps are being wrought. Mixtures are used more and more.

able information to the experienced textile technologist. It is well known to the industry, for example, that the higher titer soaps scour better, but are not readily removable, especially at low temperatures. These soaps form heavy gels on cooling and this is the property which the textile industry classifies as "body," "soil-removing properties," "heavy duty," and the like. (4) Armstrong and his colleagues (7) similarly observed that the more efficient high titer soaps have the disadvantage of being more difficult to dissolve and rinse out than the low titer soaps. In their investigations it was found that the addition of carboxymethyl cellulose (CMC) to a low titer soap helped to improve its detergent properties.

Sometimes a textile soap with a specific titer is required for a special process. As explained by one manufacturer (15), rather than prepare small, expensive batches to meet this need, it is possible to mix soaps of basic types in various proportions to yield a product with the requisite titer.

There has long been a difference of opinion among textile men concerning the relative merits of soda and potash soaps. Even the old-timers disagreed. Martin (16), for example, stated that potassium soft soaps were superior to sodium soaps for wool. Stanislaus and Meerbott (17), however, remarked that, "generally speaking, soft soaps are of less importance for the textile industry than hard soaps. . . ." The modern attitude is reflected in a review (14) on the role of soap in woolen mills. Here it is noted that, today, the finisher knows that he can use a less expensive soap made from caustic soda and fat and obtain results as good as those gotten from soft soaps. "Potash soap," it is said, "is practically non-existent today." This last, of course, is not quite true, since many textile soap makers provide both soda and potash soaps.

The "Best" Textile Soap

WHAT constitutes the best soap for textile purposes has received the attention of many workers. Thus, Collingridge (12) is of the opinion that a combined tallow and palm

oil soap makes one of the best all-round textile soaps, while Oberly (18) feels that the most favored soaps are made from olive oil or highly refined oleic acid. A full-boiled, settled soap is recommended by Collingridge. Similarly, olive oil soaps for the textile industry are generally made by the full-boiled process (19).

Of very definite interest in this connection is the fact that the "A. S. T. M. Standards" (20) provide specifications for both olive oil and palm oil textile soaps in either solid or chip form. According to this text, the neutral olive oil soaps may be of the straight type made from pure olive oil or olive oil foots and soda, or they may be of the blended type consisting of not less than 51 per cent of these oils plus other fats; the mixture being saponified with soda. Similarly, the palm oil soaps are described as neutral soda soaps made from pure palm oil or blends containing this oil (at least 51 per cent) and other fats.

In the older procedures, soaps of this sort, after finishing and settling, are drawn from the kettles into barrels, where they solidify to the curd form which has long been familiar to textile workers. According to the A. S. T. M. specifications, the solid olive oil or palm oil soaps should have a minimum anhydrous soap content of 61 per cent.

If chips are desired, as is frequently the case in modern textile mills, the soap is passed from the kettle to the flaking machines, where the hot liquid soap is cooled on rolls from which it is scraped with a knife or doctor blade. The flakes thus formed fall on the screen of a dryer where the moisture content is reduced from a high of about 35 per cent to a value of eight or nine per cent. According to the A. S. T. M. standards, the olive oil or palm oil chip soaps may not contain more than 10 per cent of volatile matter. The anhydrous soap content must be at least 85 per cent.

As pointed out in one manufacturer's literature (21), a flake or chip soap has a number of advantages over the solid or curd type soaps. Aside from certain conveniences in handling,

the flake soap is more likely to be of a uniform character. The moisture level, for example, must stay within close limits, since even a small increase in moisture content will make the flakes feel soggy and sticky. It is also pointed out that, contrary to some opinion, it is not necessary to mix an alkali, like soda ash, with soap to make a smooth dry flake. Even a low titered soap can be made in flakes without adding alkali to the kettle soap. A neutral flake and a solid curd made from the same kettle of soap are exactly the same, except for the moisture content.

Specialized Textile Soaps

THE more specialized textile soaps can best be considered in relation to the specific tasks which they are required to perform. Thus, various types and large quantities of soap are needed in the scouring of raw wool and in the processes of fulling and piece goods scouring. The first step in wool processing is the scouring or cleaning of the raw fiber to free it of the natural grease or dirt, which may be present to the extent of 20 to 50 per cent. On the thoroughness of this operation depends the success of the subsequent operations. Later on scouring is necessary to remove the lubricating and spinning oils used in the production of woolen gray goods. It should be noted that some of the soaps used for scouring are also suitable for fulling or milling, a treatment that causes a limited shrinking and felting of the goods to produce a denser, stronger fabric.

To clean fleece wool it is passed through a series of baths in which it is first scoured and then rinsed. The scouring solution, prepared with soap and soda ash, is used at the relatively low temperatures of 120° to 130° F. Hence the soap must dissolve quickly and rinse easily between these temperatures. Noble (22) cites an American manual to the effect that low titer sodium flake soaps provide the greatest money value and are superior to potassium soaps in rinsability and in resistance to hydrolysis and oxidation.

Pertinent also is the observation

by Thomas (23) that wool scouring soaps should be well made and of a specified strength in fatty acids or real soap. The fats should be of good quality, free from rosin, drying oils or fish oils and preferably of low titer to give greater solubility and ease of removal. Color, within reason, is not of great importance, providing it does not stain the wool.

According to Thomssen and McCutcheon, (19) these products generally are pure soaps, since added materials do not rinse out of the wool readily. Additions usually are made as cheaply as possible and both cold-made and boiled, settled soaps are employed. Several typical formulas for making soaps suitable for both scouring or fulling are given by these authorities. Illustrative is the following combination for a cold-made soap:

Palm oil	200 lb.
Bone grease	460 lb.
Soda lye (36° Be.)	357 lb.
Water	113 lb.
Soda ash (42° Be.)	50 lb.

For making a settled soap, a typical fat charge may contain palm oil, cottonseed foots or the equivalent in fatty acids, rosin and house grease. After proper saponification, the soap is run into barrels. It is noted that besides this type of material, a pure settled tallow soap is used.

Where a potash scouring soap for wool is desired, Stanislaus and Meerbott (17) suggest the use of a soap made from:

Olive oil foots.....	1000 lb.
Caustic potash (22° Be.)	1350 lb.

Alternatively, the following may be used:

Red oil	1000 lb.
Caustic potash (22° Be.)	1394 lb.

As wool fabrics come from the

After the sorter handpicks the fleece according to quality (finest at the shoulder, coarsest round the tail), it passes through a series of scouring bowls like this one to remove grease, dirt and other impurities.

loom, they are rough and coarse and coated with lubricating oil and grime picked up in processing. The first steps in changing this material into finished woolens and worsteds call for fulling and scouring treatments. As remarked by Schwartz and Perry, (1) combinations of soap and soda ash are still the most widely used fulling agents. Of interest in this connection are Atkinson's (24) experiments which indicated that the use of a good grade of soda soap yields superior results in the milling medium.

As already indicated, soaps used for scouring raw wool are often quite suitable for fulling or milling. However, special fulling soaps are made. For example, according to one older text, (17) a charge for making a fulling soap by the settled process may consist of 90 per cent of tallow and 10 per cent of palm oil or a mixture of 90 per cent clean house grease and five

(Turn to Page 141)



Measuring water softening capacity of

Dishwashing Compounds

DISHWASHING compounds for machine use generally contain highly alkaline salts plus one or more of the molecularly dehydrated phosphates. The primary function of these phosphates, often referred to as polyphosphate sequestering agents, is to soften hard water by forming soluble complexes with calcium and magnesium ions. In this way calcium and magnesium are rendered inactive and the resulting solution is then equivalent to soft water. Since incompletely softened water will deposit insoluble hard water film or scale on dishes and machines, it is important that dishwashing compounds soften the water in which they are used. From the standpoint of procurement, especially by Federal agencies, a suitable test for water softening capacity to measure the sequestering power of the compound is required in order to insure satisfactory performance in use.

An early issue of a Navy specification for dishwashing compound (1) required that it produce not more than a certain small weight of precipitate when dissolved in hard water containing a little soap. This test was fairly satisfactory for the purpose and the specification was used successfully for several years in the procurement of compound for naval vessels where distilled water is provided for mechanical dishwashing operations. With the close of the second World War and the attendant inactivation of many fleet units, there was occasioned a proportionally increased consumption of dishwashing compound in shore establishments where the water hardness was higher than that aboard ship. It became necessary, therefore, to employ compounds containing the better sequestering agents which, by that time, had become available in good supply. Accordingly, the specification had to be revised in order to increase the water softening requirements and to

provide a more sensitive test than that originally used.

A test procedure was adopted in a revised specification (2), which used as its criterion of water softening the ability to produce a permanent lather in hard water with standard soap solution conforming to the standards of the American Public Health Association (3). As a matter of fact, this method was already in use in two other Government specifications (4, 5). However, continued experience with the lather method brought to light certain inherent errors of which the lack of uniformity of standard soap solutions obtained from different sources was the most troublesome. Every effort was made to eliminate these errors by minute definition of test conditions. Several procurement agencies even went so far as to issue bottles of standard soap solution to each prospective bidder in order to eliminate at least those discrepancies due to the use of different soap. Because of the difficulties with the lather method, the work of promulgating a long pending new Federal specification for dishwashing compounds was handicapped.

In recognizing the lack of reproducibility of the soap lather method, the Bureau of Ships sponsored an investigation at the Industrial Test Laboratory, Philadelphia Naval Shipyard, for the purpose of developing an accurate, short, and reproducible method for water-softening capacity. Various procedures, including the present Navy specification method (2), were studied

using samples of dishwashing compounds previously submitted by bidders under past procurement schedules. In addition, several commercial molecularly dehydrated phosphates and an organic sequestering agent were tested for sequestering ability. As a result of the investigation, a method was developed which is brief and reproducible, and which determines accurately the ability of a compound to prevent the formation of insoluble hard water precipitates under conditions prevailing during the dishwashing operation. The method determines whether or not a turbidity is formed when a small amount of standard soap solution is added to a heated solution of dishwashing compound in hard water. The absence of turbidity dependably indicates that the hard water has been completely softened by the compound. In order to facilitate detection of turbidity, a blank containing the same concentration of dishwashing compound in distilled water is run simultaneously. A detailed description of the method follows:

Soap Turbidity Method

Stock hard water.—Prepare a solution in distilled water, containing calcium chloride and magnesium chloride equivalent, respectively, to 2.85 mg. of calcium carbonate and 1.2 mg. of magnesium carbonate per ml. This solution contains 4275 p.p.m. hardness (approximately 250 grains per gallon) as calcium carbonate. It should be prepared by dilution of more concentrated stock solutions of calcium chloride and magnesium chlo-

By Rubin Bernstein

Industrial Test Laboratory, Philadelphia Naval Shipyard
and

Harry Fleisher

Bureau of Ships, Department of the Navy, Washington, D. C.

TABLE I
Comparison of Water-Softening Capacity of Various Dish-
washing Compounds by the Lather and Turbidity Methods

Water Hardness (grains/gal.)	Compound A		Compound B		Compound C	
	Lather Method**	Turbidity Method	Lather Method	Turbidity Method	Lather Method	Turbidity Method
3	1.8	1.1	1.7	1.3	1.9	1.3
7	3.1	2.7	3.2	3.2	3.5	3.6
10	3.8	4.2	3.8	4.5	4.5	4.9
20	6.8	7.2	7.8	7.4	8.2	8.9

* Minimum concentration of compound, as ounces per 10 gallons of solution, required to soften the water.

** Described in (2).

ride which have been accurately analyzed. The deviation from the specified concentrations should not exceed one part per 100.

Stock solution of dishwashing compound.—Dissolve 50 ± 0.01 grams of dishwashing compound in somewhat less than a liter of distilled water. Transfer quantitatively to a liter volumetric flask and make up to mark. This solution should be tested within one hour after preparation.

Procedure.—Transfer to a 250-

ml. volumetric flask a number of ml. of stock hard water corresponding to the hardness being tested. For example, if the hardness desired is 10 grains per gallon, 10 ml. of the stock hard water is required. Add approximately 100 ml. of distilled water and then a volume of stock solution of the sample sufficient to give the desired concentration when the flask is subsequently filled to 250 ml. The stock solutions of the sample and the hard water should be measured accurately by means of burettes. Fill

TABLE II
Water-Softening Capacity of
Various Sequestering Agents
by the Turbidity Method

Water Hardness (grains/gal.)	Concentration				
	1*	2	3	4	5**
3	1.4	0.4	0.4	0.3	0.4
7	3.3	1.0	0.9	0.8	0.9
10	4.5	1.7	1.5	1.2	1.2
20	7.4	5.0	3.6	3.1	2.5

1—tetrasodium pyrophosphate; 2—sodium tripolyphosphate; 3—sodium tetrakisphosphate; 4—sodium hexametaphosphate; 5—tetrasodium salt of ethylene diamine tetra acetic acid.

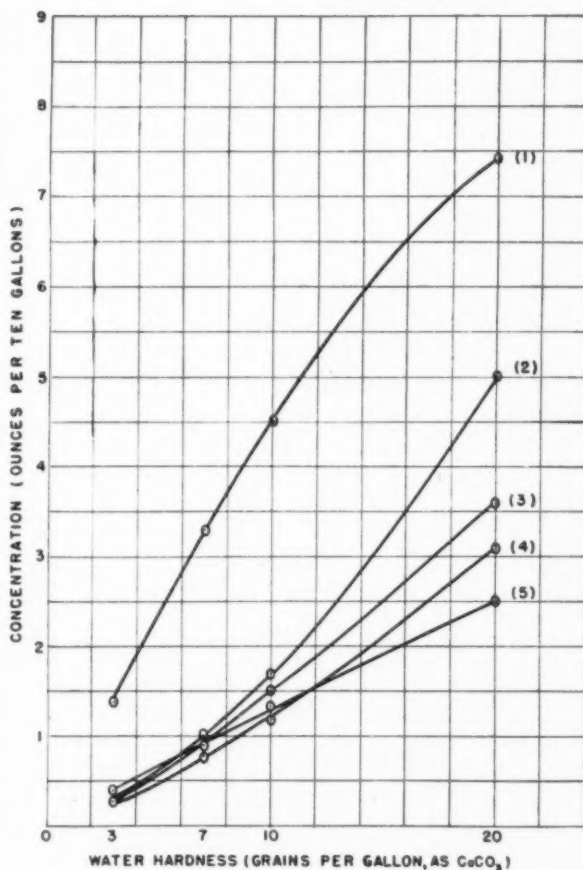
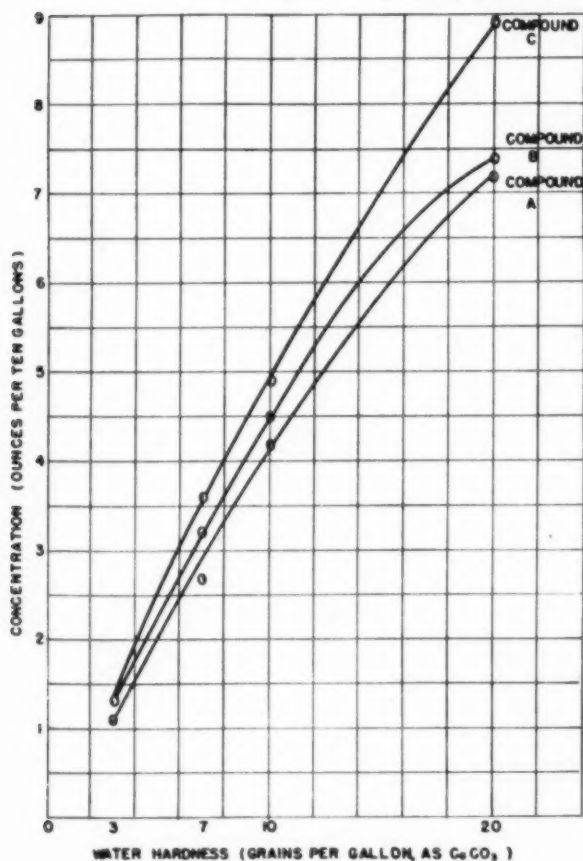
* Minimum concentration of sequestering agent, as ounces per 10 gallons of solution, required to soften the water.

** Figures for Agent 5 are expressed on a dry basis.

the flask to mark with distilled water and mix thoroughly. In the same manner, prepare a blank solution of the compound in distilled water, of the same concentration as that being tested, except that no hardness shall be present.

Pipette 10 ml. each of the test and blank solutions into separate,
(Turn to Page 82)

Fig. 1 (below). Minimum concentration of several dishwashing compounds required to soften hard water (turbidity method). Fig. 2. Minimum concentration of sequestering agents required to soften hard water (turbidity method).





New "Surex" deodorant soap, announced last month by Allen B. Wisley Co., Chicago, contains antiseptic "D-4" and lanolin. Individual cakes retail for 19 cents, two for 37 cents. The box of six, which opens into counter display, retails for \$1.10.

WHAT'S NEW?

New low cost aerosol below is "Safe-Lex," made by Bostwick Laboratories, Inc., Bridgeport, Conn. It is formulated with methoxychlor and is specially recommended for use by restaurants, hotels and institutions. Can be used for both continuous and intermittent spraying. Weight when full is 16 oz. Said to be non-flammable, product retails for \$1.89.



New silver and green foil-wrapped package for "Calgonite" special compound for machine dishwashing, announced recently by Calgon, Inc., Pittsburgh. The new wrap around label is designed to seal out moist air. Formula of product is also said to have been improved.

First consumer packaging of the new rodenticide warfarin was announced recently by J. T. Eaton & Co., Cleveland. The package is being marketed as "Rough & Ready" rodenticide. Packaged in one pound units.



New Helene Curtis "Shampoo Whip" is aerosol dispensed type product. The shampoo, which emerges "ready lathered" contains lanolin. Retails for \$1.

New "Flower of the Month Soap" by Gourielli, Inc., New York, features container of 12 cakes to retail for \$3.00. Available fragrances include carnation, lily of the valley and gardenia.





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SODIUM METASILICATE
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BORAX

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TRI SODIUM PHOSPHATE
TETRA SODIUM
PYROPHOSPHATE
SYNTHETIC DETERGENTS

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W. T. Ramsey Dies

William T. Ramsey, 70, for 25 years a sales representative of the Davies-Young Soap Co., Dayton, O., died July 26th in St. John's Hospital, Cleveland. He handled the "Buckeye" line of sanitary maintenance products from 1920 to 1945 in Ohio, West Virginia, western Pennsylvania and New York state. Upon his retirement in 1945, he was succeeded by his son, Bernard M. Ramsey, who is now covering the same territory.

Born in Cleveland 70 years ago, Mr. Ramsey lived there his entire life. He was very active in church and fraternal circles. He is survived by Mrs. Ramsey, four sons, one daughter and three grandchildren.

Perfex Plans Expansion

Perfex Manufacturing Co., Omaha, manufacturer of synthetic detergents, recently announced plans for an expansion program with a \$10,000,000 a year gross as its goal. The company started operations in a basement 10 years ago. In addition to the plant in Omaha, the company's offices are located in Shenandoah, Ia.

J. C. Rapp, president of the company, said that sales in the first four months of 1950 exceeded one million dollars. The total for the year should go over three million, he indicated.

Laurel Soap Names Rant

Laurel Soap Manufacturing Co., Philadelphia, manufacturers of soaps, oils and finishes, recently announced the appointment of Albert H. Rant as their New England sales and technical service representative. Mr. Rant has had wide experience in the manufacture and application of synthetic agents and other auxiliary products. A graduate of Lowell Textile School, he is an active member of the

Association of American Textile Chemists and Colorists. He is at present secretary of the National Com-



ALBERT H. RANT

mittee on Standard Soils. Mr. Rant resides in Edgewood, suburb of Providence, R. I.

Conference Elects Colgate

S. Bayard Colgate, chairman of the board of Colgate-Palmolive-Peet Co., Jersey City, N. J., was recently elected to the board of the National Industrial Conference Board.

FRONT COVER PHOTO

Nils S. Dahl, general manager of the John T. Stanley Co., New York soap manufacturers, well-known subject of the front cover photo in this issue, has been active in the soap industry for almost a half-century. He joined Stanley 46 years ago. For the past twenty years, he has been treasurer and a director of the Association of American Soap & Glycerine Producers, and for an equal length of time, treasurer of the Laundry & Cleaners Allied Trades Association. His activities also include among others, director of the Executives' Association of New York, trustee of the Bay Ridge Savings Bank, Brooklyn, director of the Victory Memorial Hospital, Brooklyn.

P&G Adds to Plant

An \$800,000 addition to its Baltimore plant was recently placed in operation by Procter & Gamble Co., Cincinnati. The three story structure has an additional three stories of open construction in one section which contains equipment for spray drying.

N.E. Oil Chems. to Meet

The Northeast Oil Chemists' Society will hold its next dinner meeting at 6:30 p.m., October 10, at Building Trades Employers Association, 26th Floor, 2 Park Avenue, New York. A. W. Segebrecht, eastern manager of the chemical division of Armour & Co., New York, will discuss "Industrial Chemicals from Fats."

Charge for the dinner will be \$3.50 per plate.

"Triton X-100" Price Cut

A reduction of up to one and one-quarter cents a pound in the price of "Triton X-100," non-ionic detergent and wetting agent, was announced late in August by Rohm & Haas Co., Philadelphia, one of the largest producers of this type of product.

Luckman to Architecture

A partnership has been formed with Charles Luckman, former president of Lever Brothers Co., it was announced recently by William Pereira, head of the firm of W. L. Pereira, architects and engineers, Los Angeles. The firm is now known as Pereira and Luckman. It is continuing to specialize in large commercial and institutional architecture and engineering.

Mr. Luckman was graduated with honors in architecture and engineering from the University of Illinois. He has been a registered architect since 1931 and is a member of the American Institute of Architects.



Synthetic detergents, their origin, rise in popularity and many uses were discussed recently in an interview with Bill Shipley on the CBS radio show, "Hits and Misses." Participating were Miss Evelynne Wick (left front), Fels & Co.; Miss Fayre Adams (left rear), Frank Gianinno-to Associates, package designers for the new Fels & Co. all-purpose detergent, "Falso;" and Miss Phyllis V. Stevenson, Home Economist for Fels and Co. During the discussion, Miss Stevenson stated that while demand for Falso is in excess of present production, output is rapidly being increased to meet demand.

New Brillo Plant

Construction of a new plant on Water St. directly across from one of the firm's present plants was announced recently by Milton B. Loeb, president of Brillo Manufacturing Co., Brooklyn. The company makes Brillo metal fibre soap pads and cleanser.

The new four story building will be of modern construction and interior arrangements, consisting of approximately 50,000 square feet, with structural steel frame and masonry walls. It will also house a 1,000 horse power high pressure steam plant

for processing purposes. The exterior trim of the building will be of aluminum, in keeping with the company's production of metal scouring pads for cleaning aluminum utensils. Streamlined receiving and shipping platforms are to be inside the new building for increased efficiency. Sydney Goldstone, a director of the company, is the architect.

The new building, when completed, will be the fifth operated in the U. S. by Brillo, which has four other plants in Brooklyn, as well as a factory in London, England. The lat-

est addition will be used to augment present manufacturing facilities and for increased warehousing. Construction is planned to be completed this fall. Turner Construction Co. is the builder.

Control Alkali Exports

Effective September 1, 1950, caustic soda and soda ash were placed back on the export control "Positive List," and validated licenses are now required for shipments to all destinations outside the Western Hemisphere, the Office of Industry and Commerce, U. S. Department of Commerce, announced recently.

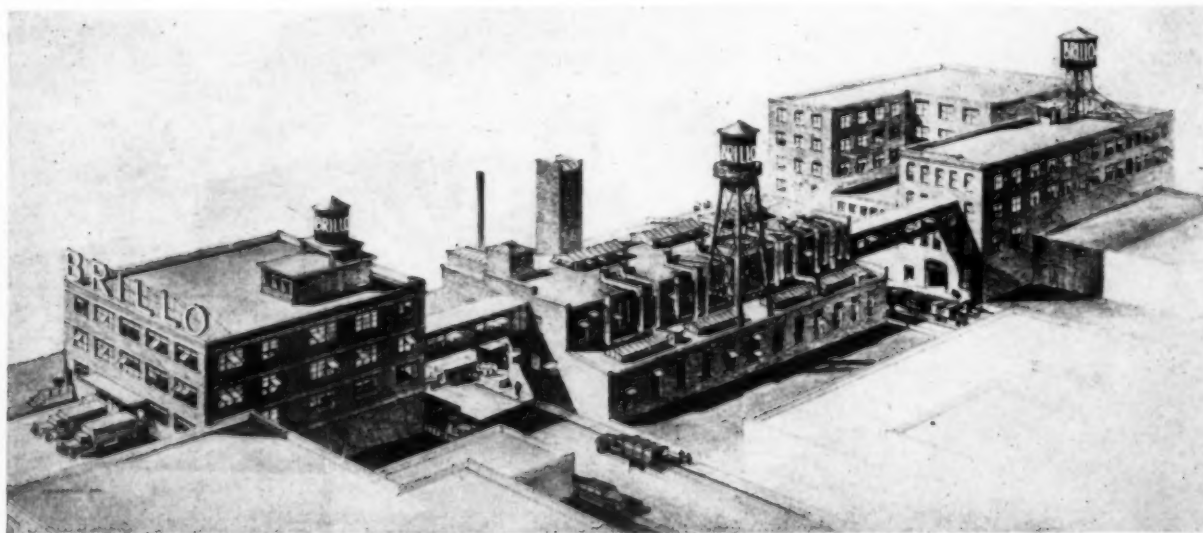
Flobeck Joins Diamond

J. A. Flobeck, engaged in sales and service work with the chemical industry along the Atlantic Seaboard for more than 20 years, has joined the New York-New England branch office staff of Diamond Alkali Company at New York in a special sales capacity, it was announced recently.

Controllers Name Soapers

Rudolph W. Sandburg, controller of Andrew Jergens Co., Cincinnati, was recently elected vice-president of the Cincinnati Control of the Controllers Institute.

At the annual meeting of the organization's Dayton Control, Milton G. Schiller, treasurer of the Davies-Young Soap Co., was renamed a director.



Apr.-June Soap Sales Down

SOAP and synthetic detergent sales declined in the second quarter of 1950, as compared with the first three months, according to census figures released recently by the Association of American Soap & Glycerine Producers, Inc., New York. Sales of soaps and detergents for the first six months of the year were four percent greater than in the first half of 1950 because of the substantial increase in the sale of synthetic detergents this year.

Non-liquid soap sales amounted to 530,576,000 pounds, worth \$93,506,000 in the Apr.-June quarter of 1950, as compared with 586,734,000 pounds, worth \$106,277,000 in the first quarter of the year. In the second quarter of 1949, non-liquid soap sales were reported to be 626,527,000 pounds, worth \$114,785,000, which was an increase over the first quarter '49 totals.

Liquid soap sales declined in the second quarter of this year, 995,000 gallons, worth \$1,296,000 being reported, as against 1,225,000 gallons, worth \$1,284,000, for the first three months of 1950. The 1949 second quarter liquid soap total sales were reported as 1,443,000 gallons, worth \$1,647,000. The increase in the worth of liquid soaps in the second quarter of this year, while their volume in gallons declined, may be explained by the fact that the Association figures are given as a unit for the first six months of the year. There is no breakdown into first and second quarters. The figures shown above for the second quarter are arrived at by subtracting the first quarter totals from the totals for the first half of the year. Since the figures are subject to correction, the apparent discrepancy may be explained at a later date.

Sales of synthetic detergents also declined in the second quarter of this year, as compared with the first quarter. They amounted to 257,165,000 pounds, worth \$49,779,000 in the Apr.-June quarter, as against 264,738,000 pounds, valued at \$51,042,000. Sales of synthetics in the second

1949 quarter were 163,165,000 pounds, valued at \$34,637,000.

Westvaco Ups Oskin, Harris

Don C. Oskin, presently phosphate division sales manager, Westvaco



HARRIS



OSKIN

Chemical Division, Food Machinery and Chemical Corp., New York, has just been made director of district sales. He was at one time resident manager at Detroit and subsequently division sales manager at New York, in charge of alkali and phosphate sales.

James R. Harris, Jr. who has been Mr. Oskin's assistant, becomes division sales manager at New York in charge of phosphate sales.

Cos. Chems. Meet Dec. 5

The Fall Meeting of the Society of Cosmetic Chemists will be held Tuesday, Dec. 5, at the Biltmore Hotel, New York. Dr. Kenneth L. Russell, Colgate-Palmolive-Peet Co., Jersey City, N. J., is chairman of the program committee.

Davidsohn a Consultant

A. Davidsohn, for the past 15 years, a research chemist with Palestine Oil Industries "Shemen", Ltd., Haifa, Israel, recently gave up that position to become an independent consultant. Mr. Davidsohn is a member of the American Chemical Society, a Fellow of the Chemical Society, London, the American Oil Chemists' Society and American Society for Testing Materials, among others.

A.O.C.S. Meets Sept. 26-28

A WIDE variety of technical papers are scheduled to be presented at the 24th Fall Meeting of the American Oil Chemists' Society to be held Sept. 26-28 at the Sir Francis Drake Hotel, San Francisco. Among the papers of particular interest to makers of soaps and synthetic detergents scheduled to be presented at the meeting are the following:

"World Economic Situation of Fats and Oils," by Karl Brandt, Food Research Institute, Stanford University; "Ion Exchange in Glycerine Purification," by P. H. Caskey, Illinois Water Treatment Co., Rockford; "Preparation of Hydroxystearic Acids from Red Oils" by R. N. Dallas, W. C. Hardesty Co., Los Angeles; "A New Solvent Extraction for Oleaginous Substances" by C. T. Smith, Wurster & Sanger, Chicago; "Optical Bleaches in Household Soaps and Detergents" by E. I. Stearns, American Cyanamid Co., Calco Chemical Division, Bound Brook, N. J.; "Unusual Applications of Surfactants in the Chemical Process Industry," by Daniel H. Terry, Antara Products, General Aniline & Film Corp., New York; "Properties of Some Newly Developed Nonionic Detergents" by T. H. Vaughn, H. R. Suter, L. G. Lundsted and M. G. Kramer, Wyandotte Chemicals Corp., Wyandotte, Mich.; "Identification of Soap Phases by X-ray Diffraction," by R. D. Vold, J. D.

Grandine, 2nd, and H. Schott, University of Southern California.

E. B. Kester and H. S. Olcott of the Western Regional Research Laboratory, Albany, Calif., are general chairman and program chairman, respectively, for the meeting, three days of which are to be devoted to technical papers. The 25th, the day preceding the meeting, will be given over to registration and an informal reception. On the 29th, a nearby copra mill will be visited in the morning. In the afternoon the group is to visit a winery or take a two hour air-sightseeing trip. The banquet is to be held on Sept. 27th, and on the following evening the group is to hear Lily Pons singing in the opera "Lucia," at the San Francisco War Memorial Opera House.

The governing board meets Monday evening, Sept. 25th with J. R. Mays, Jr., president, presiding. Officers will be elected at the meeting.

A number of exhibits of chemicals, chemical processing equipment and laboratory equipment are to be shown at the meeting.

Adagio sostenuto. (♩. 68)

MASTERPIECES OF
Harmony

VERONA AX AMBRE E-392
ALDEHYDE E-371A
TUBERIC ESTER
ORIENTALIS 2546
CYCLAMAL
FLORANOL
AMBRE E-342
RESEDALIA
AMUSKA
ROS E-131
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Adagio sostenuto. (♩. 68)

• A lilting tune, a delightful fragrance... each depends on the harmony of its notes. The purity and fineness of Verona aromatic chemicals will help you achieve harmony in your products and add a fresh note of distinction to them.

VERONA

AROMATICS DIVISION
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COMPANY

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NEWARK, N. J.

Lever Names L. A. Plant Heads



CHARLES T. ATWOOD

CHARLES T. ATWOOD, Lever Brothers Company executive, has been named manager of the firm's new Los Angeles plant, it was announced recently in New York by William H. Burkhart, vice president in charge of manufacturing and traffic. Mr. Atwood was formerly manager of the Lever plant in Edgewater, N. J. With a staff of key Lever specialists, whose appointments were also announced, he is directing the installation of processing machinery and training of a West Coast production force prior to the actual operation of the plant early next year.

His staff includes: Sidney J. Anable, manufacturing superintendent; Robert E. Sessler, plant engineer; George Duncan, industrial relations manager; Ray C. Hatter, production superintendent; Emil L. Kacer, office manager, and William C. Skarda, chief chemist.

The new manager joined the company in 1930 as laboratory assistant. Before serving a year as head of the New Jersey plant, he was manufacturing superintendent at Baltimore. Mr. Atwood was graduated in 1930 from Harvard, and he attended an advanced management course at Harvard School of Business Administration in 1949.

Mr. Anable, who will supervise all soap, shortening and margarine manufacturing processes, was formerly stationed at the Lever Hammond, Ind., plant. He is a graduate of Rensselaer



SIDNEY J. ANABLE

Polytechnic Institute, Troy, N. Y. Mr. Anable observed his 25th anniversary with the company this year.

As industrial relations manager, Mr. Duncan, who formerly held the same post at the Lever plant in Edgewater, N. J., has charge of all plant personnel activities, including employment. Another executive shifted from the Hammond plant is R. E. Sessler, a 1938 graduate of M. I. T. and a veteran of five years' Army service.

Mr. Hatter, an employee since 1937, started as a laboratory sampler at the Cambridge plant, and from 1944 until his transfer to Los Angeles was shift superintendent at the Baltimore plant. E. L. Kacer, who also joined Lever in 1937, has had long accounting experience at Hammond, Baltimore and headquarters in New York.

The new chief chemist, W. C. Skarda, a Lever employee since 1930, has had experience in laboratories of the Hammond, Cambridge, Baltimore and St. Louis plants, and for the past

two years has been on special field work in southern California.

The plant, which was started in July, 1949, is located on a 30-acre tract in the Central Manufacturing District, at the junction of Anaheim-Telegraph Road and Washington Boulevard. When in full operation it will produce the full Lever line of soap and soap powders.

New Hooker-Detrex Plant

A large, modern trichlorethylene manufacturing plant at Ashtabula, O., has been completed by Hooker-Detrex Inc. The full capacity of the new plant will be utilized in the manufacture of "Perm-A-Clor" and "Triad" metal degreasing solvents for the Detrex Corp., Detroit. The plant is located in one of the few areas in the United States where all raw materials are directly available through pipelines from adjacent plants.

Increasing demand for non-flammable degreasing solvents, has been noted for several years. The solvents produced are available for both industrial cleaning and oil extraction processes. It is expected that full-rated capacity will be reached by November 1, 1950.

Hooker-Detrex, Inc., is a jointly owned subsidiary of Hooker Electrochemical Co. and Detrex Corp. The works manager of the Ashtabula plant is H. D. McKinley, formerly manager of the solvents division of Detrex. Mr. McKinley also collaborated in the design, erection and initial operation of the Hooker-Detrex Tacoma, Washington solvent manufacturing plant. The manufacturing operations of both plants are supervised by Hooker Electrochemical Co. The national distribution of the entire output of both plants is handled exclusively by Detrex Corp.

New Hooker-Detrex trichloroethylene plant in Ashtabula, O.




SOAPMAKERS.....

**DON'T FAIL
TO EXAMINE**

GERANIUM SYNTHETIC No. 17835

DIMINISHING stocks and the fast-mounting prices of natural oils merely emphasize the incredible value of this fully-proven, low-cost geranium oil substitute. Priced far below the genuine (at this writing it costs barely one-sixth as much) GERANIUM SYNTHETIC No. 17835 makes possible tremendous savings in the manufacturer's perfume material costs. Continuing repeat orders confirm the fact that this fine product is doing an exceptional job of duplication, matching closely the basic characteristics of the natural oil and at a cost, so attractive, that no perfumer can afford to ignore its advantages, either as a full or partial replacement for the natural oil.

Expert evaluation of the odor of GERANIUM SYNTHETIC No. 17835 places it between that of the best Algerian and Bourbon varieties. A sample for examination will be sent to any manufacturer who writes us that he's interested.



**A FAULTLESS DUPLICATION
OF THE NATURAL OIL...AND
AT ONE-SIXTH THE PRICE!**

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BRANCH OFFICES and STOCKS: Atlanta, Georgia, Boston, Massachusetts, Chicago, Illinois, Cincinnati, Ohio, Cleveland, Ohio, Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri, Toronto, Canada and Mexico, D. F. FACTORY: Clifton, N. J.

Williams Acquires Conti

The acquisition through merger of the business of Conti Products Corp., Brooklyn, by J. B. Williams Co., Glastonbury, Conn., was announced late in August by Charles S. Campbell, Williams' president. Approval of the merger was voted by the Williams stockholders at a special meeting in Glastonbury.

Charles L. Huisking, president of Conti, producers of Conti's Castile soap and Castile shampoo, baby oil and powder and olive oil, becomes a member of the board of directors of Williams. Stephen L. Nordlinger, Conti vice-president joins the Williams organization to be in charge of Conti distribution.

The consolidation of two of the largest concerns in the toilet goods field is expected to result in increasing activity in the promotion of both the Williams and Conti lines as a result of the savings that will be made possible through selling to the same outlets and through the savings that will be achieved through combined shipping, according to company officials.

The expansion move by Williams, the third in three years, began in 1948 with the acquisition of the business of Skol Co. manufacturers of suntan lotion and of the Skat Company in 1949. The latter firm made insect repellents.

Victor Names Lucas

Appointment of James W. Lucas as superintendent of Victor Chemical Works' Mt. Pleasant, Tenn. plant was announced recently by Rothe Weigel, president. Mr. Lucas received his degree in chemical engineering from Vanderbilt University, and started with Victor as an assistant in the blast furnace department in 1936. In 1949 he became assistant superintendent of the Mt. Pleasant plant.

Porter to Ayer Post

The appointment of Keith Porter as sales manager of Harriet Hubbard Ayer, subsidiary of Lever Brothers Co., New York was announced recently by Ralph P. Lewis, Ayer president. Mr. Porter, prior to

his appointment to the new post in New York, was formerly general man-



KEITH PORTER

ager of Harriet Hubbard Ayer of Canada, Ltd.

Toilet Goods Showing

The Brooklyn and Long Island Toilet Goods Association will sponsor the annual showing of Christmas goods for retailers, to be held this year at the St. George Hotel, Brooklyn, Sept. 24-29.

Schimmel Price Lists

A price list of its perfuming materials for the sanitary products industry covering aromatics for liquid and concentrated soaps, household soaps and cleaners, various types of detergents, sprays and disinfectants, polishes and waxes, paradichlorobenzene, etc., was issued recently by Schimmel & Co., New York, as price list No. 1, S.

A supplement to price list X, No. 25, covering price changes on essential oils and aromatic chemicals brought about since the Korean situation was issued by Schimmel last month.

New Salt Lake City plant of Filtrol Corp., Los Angeles, now in the process of building is expected to be completed early in January. Arthur D. Yates is to be manager.



McCarthy to Leave Gross

M. J. McCarthy, vice-president in charge of purchases for A. Gross & Co., New York, will sever his connection with the company at the end of this year, it was announced recently. He has been with Gross for the past 19 years and was formerly in charge of sales. Future plans of Mr. McCarthy will be announced shortly.

Woulfe in New Post

Henry P. Woulfe, former president of the Pepsodent Division of Lever Brothers Co., New York, recently joined Manz Corp., Chicago as color printers and engravers, as a vice-president. He resigned as president of Pepsodent in February of this year shortly after all Lever Brothers associate and affiliated companies' activities were integrated in New York.

Detergent Bibliography

Dishwashing detergents and dishwashing machines are the subject of a new technical bibliography just released to the public through the Office of Technical Services of the Department of Commerce. The bibliography provides descriptive references on sixty-six representative patents in these fields, issued during the years 1932-1948. An index of inventors is included. PB 99428, "A Patent Survey on Dishwashing Detergents and Dishwashing Machines," is available from the department's OTS, Washington 25, D. C., at 50 cents per copy.

Armour Man to Horlicks

B. B. Freitag, formerly sales manager of the soap division of Armour & Co., Chicago, was recently named sales manager of Horlicks Corp., Racine, Wis.



we can't say we know
all the answers...

but we know we have
soap-selling scents!



Nobody—well, almost nobody—knows why one good odor in soap appeals to more people than another good odor. But we do know, through years of experience in blending and selling, which odors have the widest appeal. Drawing upon this research and experience, we have developed a number of distinctive compositions especially designed to captivate the soap-buying public. These compositions are ready for incorporation in your finished product. You can depend on their stability, odor strength and tenacity.

Greater Distinction through

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Lever House Under Way



Sidewalk "superintendents" inspect erection of sign at Park Avenue site of Lever House, new headquarters of Lever Brothers Co. between 53rd and 54th Streets, New York, as contract for construction was awarded to George A. Fuller Company of New York.

THE contract for construction of Lever House, the new 21-story headquarters of Lever Brothers Co. at 390 Park Ave., New York has been awarded to the George A. Fuller Co. of that city, it was announced recently. Scheduled for completion in early fall, 1951, work on the glass and stainless steel structure is now under way. Demolition of buildings formerly located on the site was completed recently, enabling excavation operations to start. Company officials stated that construction would be under the supervision of Skidmore, Owinks and Mer-

rill, New York architectural firm.

The building, occupying the entire west side between 53rd and 54th Streets, will be occupied solely by Lever Brothers Co. and its major subsidiaries, Pepsodent Division, Jelke Good Luck Products Division and Harriet Hubbard Ayer, Inc. Executive and division offices are now located at 505 Park Avenue and the general offices are at 80 Varick Street.

Providing 280,000 square feet of office space, Lever House will incorporate many unique architectural features. The main structure, without

setbacks, will be confined to one fourth of the lot area, making it impossible for future buildings to cut off light, view and air.

An arcade opens to the street on three sides and an unusual ground floor that will have a garden in the center distinguish the building, which will be 302 feet 8 inches tall when completed. The only enclosures on street level will be the glassed-in lobby leading to elevators and an auditorium.

Except for an open court directly over the garden, the second floor will cover the entire lot. On the third floor, where the main structure begins, will be an employee restaurant and recreation room, and will open on a landscaped terrace.

The exterior "skin" will be entirely composed of heat-resistant glass and stainless steel. Although it has a blue tinge from the outside, the glass will appear colorless to those inside the building, and will filter out 30 per cent of the sun's radiant heat.

Fred Lueders Back Oct. 1

Fred J. Lueders, president of George Lueders & Co., New York, who underwent a serious operation two months ago, is still confined chiefly to his home, but states that he will return to active duty at his office on October 1. During recuperation, Mr. Lueders has paid an occasional visit to his office, but will not be back on a full time basis until the beginning of next month.

New Sugar Beet Plant

Sugar Beet Products Co., Saginaw, Mich., announced recently the addition of a 142 x 65 foot building to its plant for the manufacture of a new line of hand soap powders that will have detergent-disinfectant properties. The improvement will cost about \$50,000, according to Lynn W. Staples, general manager, who pointed out that more storage and manufacturing space will be provided. There will be three new shipping stations and new mixing machinery will be installed.

The new line, carrying the trade name "Beetsol" products, will be distributed solely through jobbers.

Presentation of the 1949 National Industrial Advertisers Assn. award to Norda Essential Oil and Chemical Co., New York, for a campaign of "outstanding excellence in its planning and execution." Blaine Wiley, executive secretary of the NIAA is shown congratulating W. H. Rowse, vice-president of Norda, at a luncheon at the New York Advertising Club recently. Looking on in the photograph are Fred Gardner, president, and Ralph Bennett, vice-president of Fred Gardner Co., New York, Norda advertising agency, and E. E. Benedict, Norda sales manager.



Soap or Synthetic Batch or Continuous

YOU NEED A GOOD CAUSTIC

You can make a better soap or synthetic detergent with Wyandotte Caustic Soda. And that's just as true of the new continuous saponification method as it is of full-boiling.

In fact, many of these new methods require a high-quality caustic or the catalyst will be contaminated.

Wyandotte makes caustic soda in sufficient grades to meet most specifications. Our "Mercury Cell" grade is exceptionally pure. Produced by the mercury cell process, it needs no further purification to meet even the highest specifications. This *natural* purity

means that you need not depend upon the efficiency of a purification system for purity and uniformity.

Take advantage, too, of the economies in transportation, storage and handling costs that come when you select the *form* of Wyandotte Caustic Soda that is right for you. We make Wyandotte Caustic Soda in 7 forms: 50% liquid; 74% liquid; solid; standard flake; 1/4" flake; crystal; powdered. Shipment can be made by truck, box-car, tank car or water carrier. Write for detailed information on Wyandotte's grades and forms of caustic.

SODA ASH • CAUSTIC SODA
BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE
CHLORINE • HYDROGEN • DRY ICE
SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE
PROPYLENE DICHLORIDE
AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

Wyandotte Chemicals Corporation
Wyandotte, Mich. • Offices in Principal Cities



Wyandotte
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RAW MATERIAL

MARKETS

As of Sept. 7, 1950

SUBSTANTIAL price increases on all fats and oils were recorded during the past month. Tallow moved $3\frac{1}{4}$ c in one day to its current level of $12\frac{1}{4}$ cents for the fancy grade, as compared with an early August quotation of $8\frac{1}{2}$ cents. Coconut oil picked up $2\frac{1}{4}$ cents a pound, crude basis delivered on the Pacific Coast, and is now listed at 18 cents a pound, as compared with $15\frac{3}{4}$ cents early in August. The coconut oil increase may be traced to the rise in copra, which went from \$210 to its present figure of \$240.

Meanwhile in Washington a bill, H.R. 8992, which would extend to coconut oil derived from copra originating in the trust territory of the Pacific Islands the same exemption from the 2 cents per pound processing tax that applies to coconut oil derived from copra originating in the Philippines, ran into a snag. An amendment written into the bill by the Senate was objected to in the House of Representatives and the bill was ordered sent to conference. The Senate amendment, added at the request of the State Department, was to the effect that the President shall have the authority to withdraw the tax preference to the extent required by any international obligation of the United States.

Continuation of the strike in caustic soda and soda ash, crippling effects of which are beginning to be felt with the closedown of plants requiring those basic materials, also highlighted the month's marketing news. The spread of the strike to three producing units of Wyandotte Chemicals Corp., Wyandotte, Mich., ceasing all production of soda ash there was reported yesterday. It is understood that U. S. officials are planning allocation of these two vital basic materials as soon as the economic mobilization bill awaiting Mr. Truman's signature becomes law. There is also talk of possible sei-

zure of production facilities of caustic soda and soda ash plants by the government.

Mounting prices on other fats and oils include those of cottonseed oil, which is now bringing $19\frac{1}{2}$ cents a pound. It was $17\frac{1}{2}$ cents on about the last day of July. Soybean has climbed to $16\frac{1}{4}$ cents a pound from the price listed about one month ago of 14 cents. Peanut oil has moved from 20 cents to its current figure of $21\frac{1}{4}$ cents. Corn oil picked up two cents during the month and is presently registered at 19 cents. Lard is now selling at $14\frac{3}{4}$ cents a pound.

In discussing the effect of the Korean situation on prices of fats and oils a recent report of the Bureau of Agricultural Economics of the U. S. Department of Agriculture points out that higher prices are ahead as a result of increased industrial activity and demand for fats and oils. Prices are likely to average higher in the next 12 months than they did in the past year, the report states.

Production of fats and oils from domestic materials in the 12 months beginning October, 1950 will be about the same as the comparable period, 1949-50, when production amounted to about 12 billion pounds. Output of lard and grease is expected to be larger in the coming year, as against last year, because of a greater number of hogs and cattle on farms than a year ago. Prospective supplies of feedstuffs are said to be ample and slaughterings are expected to be larger in 1950-51 than a year ago.

Production of palm oil in Malaya during June, the latest month for which figures are available,

amounted to 4,226 long tons, as compared with 4,433 for May. Stocks of palm oil at the end of June amounted to 6,999 long tons, as compared with 5,905 at the beginning of June. Output of palm kernels in Malaya in June was put at 1,070 long tons, a slight decline from the previous month's total of 1,086 long tons. Stocks at the end of June were 1,095 long tons, as against 1,400 at the start of the month.

Price increases of two cents C.L. on two of its hydrogenated fish fatty acids and hydrogenated fish oil glyceride and an advance of one cent on the following were reported recently by Emery Industries, Inc., Cincinnati: hydrogenated tallow glyceride, two hydrogenated tallow fatty acids and a hydrogenated fatty acid, all in flake form. Increases of $\frac{3}{4}$ of a cent in tankcars on one distilled liquid fatty acid and four double distilled liquid fatty acids, and an upward revision of $1\frac{1}{2}$ cents on distilled coconut fatty acid and the double distilled product were also reported.

An increase of 50 percent in acreage for planting of pyrethrum was recommended for 1950 recently by the pyrethrum board of Kenya, British East Africa. The acreage was cut sharply in 1949, partially as a result of the development in the U. S. of synthetic pyrethrum (allethrin). Production for '49 was approximately 2,500 tons, according to the Bureau of Foreign and Domestic Commerce.

The "Fritzbro Reporter" of Fritzsche Brothers, Inc., New York, issued late in August, reviews the essential oil and aromatic chemical market in relation to the Korean situation. In the face of growing demand for perfuming materials from the Far East, prices are moving upwards. This applies all along the line on both essential oils and aromatic chemicals. The approach of a seller's market is rapid, according to the "Reporter."

GLYCERINE PRICES SOAR

Offers to buy crude glycerine for 57 cents a pound were reported in the trade recently. One major soap company is advancing its price five cents a pound on the crude to bring it up to around 33 cents.

PINE OIL

SMELLS CLEAN...CLEANS CLEAN

Mechanics who have used pine oil soaps say there's nothing like them for removing grease and grime. They naturally associate pine oil with cleanliness. It not only smells clean, but quickly penetrates and removes the most stubborn dirt from pores without irritation.

Hercules® Pine Oils mix easily with other soap ingredients, do not stain, are safe to handle, and low in cost. It will pay you to continue to rely on the economy and sales appeal of these natural aromatic detergents.



HERCULES POWDER COMPANY
961 Market Street, Wilmington, Delaware



Low AQC Soap Bid

In a recent opening for miscellaneous supplies by the Army Quartermaster Corp, New York, a low bid of 4.6 to 5.6 cents was submitted by Klenzal Manufacturing Co., Chicago, on 119,000 pounds of hand scouring, mechanics soap powder.

Wax Award to Trio

Trio Chemical Works, Brooklyn, received the award on an unspecified quantity of floor wax with a bid of 40.7 cents in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C.

Low P. O. Supply Bids

Low bids on three items in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C., were submitted by Rose Chemical Co., New York, and B. R. Elk & Co., Garfield, N. J., with identical bids of \$1.73 on an unspecified quantity of carbon tetrachloride. Trio Chemical Works, Brooklyn, was low with bids of 39 cents on 26,000 gallons of metal polish and 43.8 cents on an unspecified quantity of the same material.

Low F.S.S. Soap Supply Bids

In a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C., the following bids were received on various types of soaps:

(1) Liquid toilet soap, item 51-S-1709, Trio Chemical Works, Brooklyn, 44.7c Boston, 38.5c New York, 40.2c Washington, 54c Chicago, 46.7c Cleveland and item 1715, 38c Cleveland; same item, Crystal Soap & Chemical Co., Philadelphia, 30.6c Washington and 42.3c Chicago.

(2) Chip soap and laundry soap, item 51-S-1430, Procter & Gamble Distributing Co., Cincinnati, 10.15c New York, 11.83c Denver, 9.86c San Francisco; same item, Armour & Co., Chicago, 9.62c Washington; item 1655, Armour & Co., 5.8c New York, 6c Washington, 7.1c Cleveland, 7.3c East Point, Ga.; Globe Grocery Co., South Boston, 6c Washington (duplicate bid); same item, Procter & Gamble Distributing Co., Cincinnati, 8.6c Denver; item 1674-10, General Soap Co., Chicago, 14c

Washington, 12.8c Chicago, 13.88c East Point; same item, Pioneer Soap Co., San Francisco, 15c San Francisco, 16c Seattle; same item, General Soap Co., Chicago, identical Seattle bid; item 1675, Armour & Co., 10.9c Washington, 10.22c Chicago, 11.66c East Point, 9.75c New York, 10.6c Cleveland; same item, Pioneer Soap Co., 13.5c San Francisco; same item, General Soap Co., 14.45c Seattle; item 1678, Armour & Co., 9.75c New York, 10.6c Cleveland; same item, Procter & Gamble Distributing Co., 10.35c Washington; item 1750, Armour & Co., 4.3c New York, 4.52c Washington; same item, General Soap Co., 4.97c Cleveland, 7.45c Los Angeles; item 1755, Armour & Co., 4.2c Washington, same item, General Soap Co., 4.25c Chicago, 6.23c Denver; item 1885, Procter & Gamble Distributing Co., 12.49c Boston, 12.88c New York, 12.32c Cleveland, 12.4c Chicago, 12.4 Washington; item 1900, General Soap Co., only bidder, 17.73c Boston, 17.67 Washington, 16.97c Cleveland, 16.25c Chicago; item 1910, General Soap Co., only bidder, 17.23c Boston, 17.17c Washington, 15.75c Chicago, 18.95c Seattle; item 1920, Imperial Products Co., Philadelphia, only bidder, 18c Boston and Washington, 20c Seattle.

(3) Scouring compound, item 51-P-2550, Wilbert Products Co., New York, 5.2c Washington, 5.2c Cleveland, 5.5c Chicago, 9.3c San Francisco, 9.3c Los Angeles; item 2560, Puritan Chemical Co., Atlanta, 2.99c East Point; same item, Imperial Products Co., 2.48c Washington; item 2565, General Soap Co., 3c Chicago, same item, Puritan Chemical Co., 2.99c; item 2585, Murro Chemical Co., New York, 6.2c New York, 6c Washington, 7c Chicago, 8c East Point, 12c San Francisco, 12c Los Angeles, 7c Chicago; same item, identical bids on East Point, Los Angeles and San Francisco submitted by Imperial Products Co.

(4) Paste soap, item 51-S-1715-960, Harley Soap Co., Philadelphia, 9.5c Washington; same item, General Soap Co., 9.38c East Point, 11.45c Seattle; item 1716, Harley Soap Co., 8.5c Washington, General Soap Co., 8.3c Cleveland, 7.78c Chicago, 8.88c East Point, 9.73c Denver.

(5) Paste grit soap, item 51-P-250, Skat Co., Hartford, Conn., 6.86c Boston; same item, Utility Co., New York, 6.9c New York; same item, Larkin Soap Co., Teaneck, N. J., 7.15c Washington, Cleveland, Los Angeles; item 250-100, Skat Co., 5.25c Boston; same item, Utility Co., 5.2c New York; same item, Skat Co., 10.53c Washington; same item Larkin Soap Co., 5.84c for Cleveland, Chicago, Washington, East Point, San Francisco, and Los Angeles.

Misc. F.S.S. Awards

Among the awards on recent openings for miscellaneous supplies by the Federal Supply Service, Washington, D. C., were the following: Floor wax, R. M. Hollingshead Corp., Cam-

den, N. J., with a bid of 84 cents on item 52-W-467-25.

Soap, Day & Frick Co., Philadelphia, item 51-S-1530 with a bid of 9c for Denver and 8.75c on item 1550 for Denver; Newell-Gutradt Co., San Francisco, on item 51-S-1530, 7.01c for San Francisco, item 1550, 5.85c for San Francisco, item 1575, 12.54c for Fort Worth.

Soap, item 51-S-1674-10, General Soap Co., Chicago, 12.75c for Denver, 14c for Los Angeles, item 51-P-2550, 6.6c for Fort Worth, item 2585, 6.8c for Fort Worth, Swift & Co., Chicago, item 51-S-1750, 4.75c Fort Worth; Hershey Estates Soap Division, Hershey, Pa., item 51-S-1910, 14c Fort Worth.

Disinfectant, Selig Co., Atlanta, item 51-D-395-10, 70c for Fort Worth; Trio Chemical Works, Brooklyn, item 51-D-395-10, 54.5c for Boston, 49.5c New York, 50.5c Washington, 64c Chicago, 61.5c East Point, Ga., 66c Kansas City, 78c Denver, item 395-15, 57.5c East Point, item 395-55, 36.3c New York, 38.5c Washington, 37.8c Cleveland, 51.8c Chicago, 49.3c East Point, 66.8c Fort Worth.

Toilet bowl cleaner, Imperial Products Co., Philadelphia, item 51-C-1313-485, 12c Boston, 11.7c New York and Washington and 15c San Francisco and Seattle; Marjo Products Co., Chicago, item 51-C-1313-485, 11c Chicago, 12.5c East Point, 12.9c Fort Worth, 12c Kansas City, and 13c Denver.

Govt. Purchasing Booklet

A brochure describing the what, where and how of Federal Government procurement activities is now available from Government Procurement Reporter, P. O. Box 150, Long Island City 1, N. Y.

FSS Floor Machine Award

The award on floor polishing and scrubbing machines in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C., went to Finnell System, Elkhart, Ind., with bids of \$135.20 on item 40-M-19 and \$169 on 40-M-21.

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Famous
for soap perfumes
of highest quality

Schimmel & Co., Inc.

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FOR QUALITY

NEW

TRADE MARKS

THE following trade-marks were published in the August issues of the *Official Gazette* of the United States Patent office in compliance with section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, a fee of ten dollars must accompany each notice of opposition.

Crown—This for screw-worm killing preparation in paste, liquid or semi-liquid form. Filed Sept. 13, 1946 by Crown Products Co., Douglas, Ga. Claims use since Jan. 1, 1946.

Wisp-Air—This for holder for a bottle of liquid air-freshening deodorant. Filed Jan. 30, 1947 by Phillips Chemical Co., Chicago. Claims use since Dec. 26, 1946.

The Double Killers—This for insecticides in liquid and powder forms for humans, animals and plants. Filed June 2, 1947 by Central Paint & Varnish Works, Inc., Brooklyn. Claims use since Jan. 15, 1947.

"Sterosan"—This for preparations for human use for treatment of bacterial infections of the skin. Filed June 18, 1947 by Geigy Co., New York. Claims use since May 27, 1947.

Beam—This for cleaning preparation in liquid form for cleaning and polishing painted, enameled and varnished surfaces. Filed Dec. 14, 1946 by Beam Chemical Co., Berkeley, Calif. Claims use since Sept. 6, 1946.

Sunshine Auto Cutter—This for detergent preparation for cleaning automobiles. Filed Dec. 2, 1946 by Cobbs' Manufacturing Co., Pontiac, Mich. Claims use since Jan. 10, 1946.

The following trade marks are published in compliance with section 13 (a) of the Trade Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of \$25 must accompany each notice of opposition.

Jentle Pearls—This for granulated soaps. Filed Jan. 7, 1950 by Towsley, Inc., Indianapolis. Claims use since July 31, 1946.

Shu-Glo—This for shoe polish. Filed Feb. 29, 1949 by Sigma Chemical Co., St. Louis. Claims use since Sept. 10, 1946.

Mit-E-Kil—This for insecticide. Filed July 30, 1948 by Hinton & Co., New York. Claims use since August, 1941.

Elo—This for chemical compounds in powder form for removing labels, etc., from bottles. Filed May 20, 1949 by Doe & Ingalls, Inc. Everett Mass. Claims use since Apr. 26, 1949.

Rulon's—This for household germicides. Filed Aug. 10, 1949 by Rulon Laboratories, Inc., Burlington, Ia. Claims use since June 15, 1942.

Frisky—This for toothpaste. Filed Aug. 28, 1948 by Wolff Freres, Inc., New York. Claims use since Aug. 17, 1948.

Zest—This for dentifrice. Filed Apr. 20, 1949 by Procter & Gamble Co., Cincinnati. Claims use since Nov. 24, 1948.

Uncle Tom & Son—This for shampoo. Filed Jan. 31, 1949 by Uncle Tom & Son, Ranger, Tex. Claims use since June 15, 1944.

Tig—This for liquid chemical material for cleaning printers' type. Filed Feb. 7, 1949 by Diversey Corp., Chicago. Claims use since Jan. 13, 1949.

Jentle Suds—This for detergent for general household use. Filed Feb. 10, 1949 by Lever Brothers Co., Los Angeles. Claims use since Dec. 24, 1948.

Nola—This for soap and soap flakes. Filed Mar. 8, 1949 by Iowa Soap Co., Burlington, Ia. Claims use since June 26, 1928.

Trenamine—This for detergents for use in processing textiles, etc. Filed Apr. 25, 1949 by Alco Oil and Chemical Corp., Philadelphia. Claims use since Feb. 5, 1941.

Complexionette—This for toilet soap. Filed May 3, 1949 by Colgate-Palmolive-Peet Co., Jersey City, N. J. Claims use since Mar. 10, 1949.

Eil-Be-Ki—This for preparation for killing roaches or water bugs. Filed June 10, 1949 by Eli-Be-Ki Chemical Co., Columbus, S. C. Claims use since May 9, 1949.

Super Mistorizer—This for electrical insecticide atomizer. Filed Apr. 9, 1949 by West Disinfecting Co., Long Island City, N. Y. Claims use since Jan. 12, 1949.

Cul—This for washing and cleaning compound. Filed May 3, 1949 by Culligan Zeolite Co., Northbrook, Ill. Claims use since Nov. 24, 1948.

Beautyseal—This for automobile polishes. Filed Dec. 24, 1948 by Beauty Seal Products Co., Arcadia, Calif. Claims use since Feb. 28, 1939.

ECL—This for liquid polish for metal and glassware. Filed Apr. 2, 1949 by Leach Manufacturing Co., Dallas, Tex. Claims use since Feb. 8, 1949.

Cunilate—This for fungicidal material. Filed Jan. 22, 1948 by Scientific Oil Compounding Co., Chicago. Claims use since Jan. 5, 1948.

Lady America—This for insecticides, disinfectants, etc. Filed Mar. 11, 1948 by Lady America Home Products Co., Kalamazoo, Mich. Claims use since July, 1946.

Sergeant's—This for tick killer. Filed Nov. 16, 1948 by Polk Miller Products Corp., Richmond, Va. Claims use since Dec., 1885.

Phos Kil—This for insecticides. Filed Nov. 23, 1948 by Food Machinery and Chemical Corp., San Jose, Calif. Claims use since July 28, 1948.

6-12—This for insect repellent. Filed Jan. 24, 1949 by Union Carbide and Carbon Corp., New York. Claims use since July 7, 1948.

MAG-70—This for insecticide. Filed June 17, 1949 by Stauffer Chemical Co., San Francisco. Claims use since Apr. 21, 1949.

Botonone—This for insecticides. Filed July 12, 1949 by Industrial Aromatic Co., New York. Claims use since June 15, 1949.

Refrigasweet—This for deodorizing compound for refrigerators. Filed July 12, 1949 by Robert Morgan, Rutherford, N. J. Claims use since Sept. 19, 1947.

Veradero—This for waxes derived from sugar cane. Filed Sept. 17, 1949 by Sun Chemical Corp., Long Island City, N. Y. Claims use since Aug. 9, 1949.

Reductor—This for odor reducing composition for industrial use. Filed Sept. 22, 1949 by 44 Trinity Place Corp., New York. Claims use since Aug. 24, 1949.

Remarco—This for insecticide and fungicide. Filed Sept. 26, 1949 by Re-Mark Chemical Co., Miami, Fla. Claims use since June 25, 1949.

Slicker Juice—This for liquid wax preparation for preserving bowling balls. Filed Aug. 8, 1947 by Bowling Products Co., Chicago. Claims use since Apr. 18, 1947.

Diaper San—This for liquid germicide. Filed Apr. 19, 1949 by Highland Chemical Products, Inc., Springfield, O. Claims use since Feb. 28, 1949.

Thalidol—This for anti-bacterial. Filed May 20, 1949 by Sharp & Dohme, Inc., Philadelphia. Claims use since May 4, 1949.

Wydane—This for parasiticide. Filed June 2, 1949 by Wyeth, Inc., Philadelphia. Claims use since May 25, 1949.

Kontak—This for fungicide. Filed June 24, 1949 by Rock Ledge Laboratories, Inc., New York. Claims use since Mar. 29, 1949.

WaxOff—This for dry, chemical cleaning compound for removing wax and dirt from floors. Filed July 14, 1947 by Schalk Chemical Co., Los Angeles. Claims use since Apr. 14, 1936.

HOUCHIN *offers a word of advice*



As manufacturers of America's most complete line of soap making equipment, we of HOUCHIN MACHINERY CO. urge our customers and others at home and abroad, to make an immediate check up of their plant equipment while existing stocks are available here, from which to make machine replacements, additions to production potential or reconditioning, that may be deemed advisable at this time.

Feel free to consult us concerning anything that pertains to soap making machinery and your ability to handle peak loads efficiently.

THE NEW HOUCHIN LINE INCLUDES:

Mixers, Amalgamators, Steel and Granite Roll Mills, Plodders, Cutters, Presses, and High Speed Wrapping Machines for continuous synchronized soap manufacture.

HOUCHIN MACHINERY COMPANY, INC.

Manufacturers of Soap Making Machinery for Over Three Quarters of a Century

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HAWTHORNE, NEW JERSEY, U. S. A.

Spray Dried Washing Powders

THE manufacture of washing powder by the spraying process has several advantages over the old "floor" method, which involved spreading the molten composition on floors and allowing solidification by crystallization. Among the advantages may be included: (1) an increase in productivity, (2) a smaller floor space required by the spraying tower or spraying rooms, (3) possibility of manufacturing different types of powder in a short time, and (4) a powder with a particular low density, as compared with the product of the floor process.

The spraying operation may use either nozzles or discs in ejecting the material. In the first case, the mass is pressed out in a conical jet, where the central perforation of the nozzle allows the use of hot or cold pressure air. The disc process operates with horizontal discs which revolve at 5000 to 20,000 rpm, and are driven by an electric motor.

Washing powders may be grouped into two classes, those prepared by the cold spray process, in which the water content of the product is bound by crystallization; and powders prepared by the hot spray process, from which the water is removed by drying.

In the cold spray process, powders are prepared with a fatty acid content up to 30 per cent, and a water content of 30 to 35 per cent. Air with a relative humidity under 80 per cent, and below 20° C. is used for spraying. Temperatures exceeding 20° inhibit crystallization of the soda ash to crystal soda, since soda ash is transformed to soda and water at

higher temperatures. This method is useful in the manufacture of bleaching soda.

A basic composition for products prepared by the cold spray process is as follows: five to eight per cent detergent, 40 per cent or more soda ash, 52 to 55 per cent of phosphates, cellulose glycolates, water glass, and sodium sulfate.

Powders prepared by the hot spray method have a water content of about five to eight per cent. This method is particularly suited to preparing shampoos and other products which require a high content of detergent. Powders prepared by the hot spray process may be packed immediately, or after a short period of cooling. When stored before packing, the product changes far less than the cold sprayed powder, and keeps its granular structure.

Detergent raw materials for washing powders include fatty alcohols, fatty acid condensation products, aryl alkyl sulfonates, naphthalene sulfonates, and paraffin sulfonates. The presence of various phosphates, sodium chloride, and other non saponifiable substances retards crystallization. In the preparation of shampoos, bicarbonate, Glauber's salt and sometimes small amounts of soda may be added to improve the density of the product.

When ingredients which retard

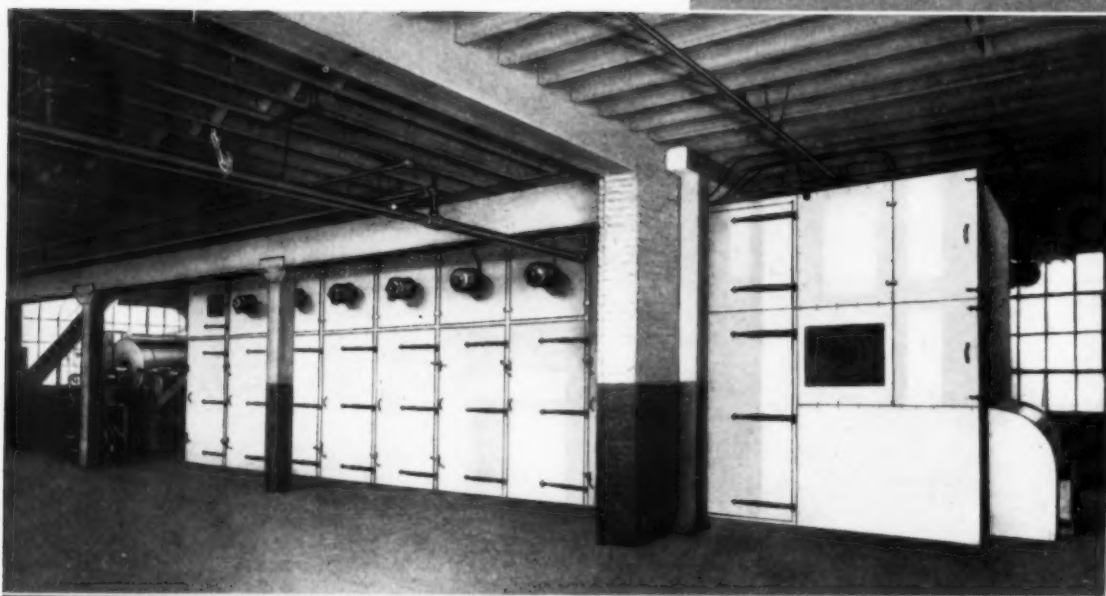
crystallization are to be incorporated in the product, they may be added to the basic mixture, and the composition sprayed as a whole, providing the detergent content is below 20 per cent. Products which contain a larger amount of active detergent should be sprayed, and the crystallization retarding substances added to the sprayed product. Addition of raw materials in such final stages may seem to present a disadvantage on the basis of different specific weights and consequent separation of the substances in the packages by manipulation, shaking, etc. However, this disadvantage will occur only when the added dry substance represents a fairly large proportion of the total amount of powder. A proportion of 60 parts of separated powder with 30 parts of other substances combines satisfactorily.

In the manufacture of bleaching powders of the type incorporating oxygen salts, it is necessary to determine how the oxygen can best be stabilized. Raw materials should be selected on the basis of low catalytic action, and obviously the basic mixture should have as little water as possible, due to the decomposition of oxygen salts in the presence of aqueous solutions.

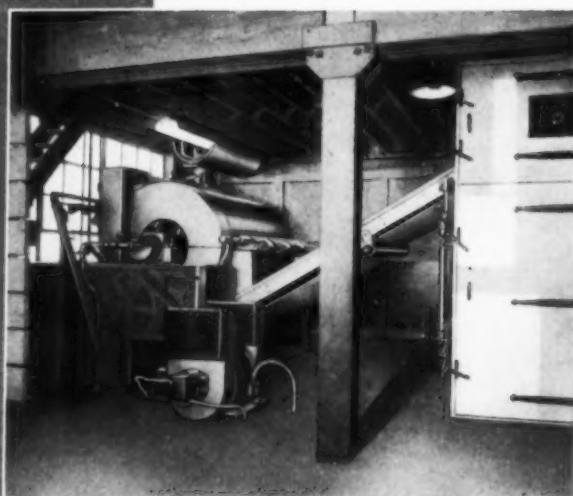
The detergent, soda, water glass, etc., should be made separately from the salt mixture containing the

Advantages of producing washing powders by spray drying include: greater production; reduced floor space for tower; ability to make different types of powder, particularly powders of low intensity.

THE *NEW* SOAP CHIP DRYER *by* SARGENT



Accurate FEED CONTROL — *Perfect* CHIP THICKNESS CONTROL



FOR INCREASED PRODUCTION

SARGENT'S New Soap Chip Dryer has flexible feed control and accurate chip thickness control—with three variable speed drives, for the rolls, for the feed apron, for the dryer conveyor. It has many other new features all designed to speed production at low operating cost.

The installation illustrated is at Standard Soap Co., Camden, N. J. Production is 2000 lbs. tallow base laundry soap chips per hour, with intake moisture of 34% and leaving moisture of 8%. Harder drying soap averages 1600 lbs. per hour. Chip thickness of 10/1000 to 12/1000 is consistent and even across full width of chilling roll and feed apron conveyor.

Please write for full particulars.

C. G. SARGENT'S SONS CORPORATION
Graniteville, Massachusetts, U.S.A.

SINCE  1852

oxygen in stabilized form, and the two combined prior to packing. The final product is fairly stable, indicating a content of about 9-93 per cent of the added oxygen, even after five or six months of storage. H. Herwit, *The Alchemist* 4, No. 5, 113-121 (1950).

Glycerol Determination

A method for determining glycerol in soap is as follows: Ten milliliters of 30 per cent sodium hydroxide and 60 milliliters of ethyl alcohol containing five per cent methyl alcohol, are added to a 10 milliliter sample, containing .1 to .8 grams of glycerol, which has been neutralized previously. The whole is mixed, and a solution of

10 grams of cupric chloride and 100 grams of ethyl alcohol are added, until a permanent precipitate of cupric hydroxide forms. More solution is added to make 100 milliliters. The mixture is filtered, and the glycerol copper complex in the filtrate is decomposed by adding dilute sulfuric acid to a 50 milliliter portion of the filtrate. Add seven grams of potassium iodide, and titrate the liberated copper sulfate.

Glycerol in soap lyes may be determined by first acidifying the sample, passing through a wet filter, then neutralizing, and following the above procedure. In toothpaste, the sample is treated first with amyl alcohol, washed with ethyl alcohol, and the filtrate used for the analysis. *Bull mens. ITERG* 4, 168-171 (1950).

Shale Oil Cuts for Detergents

Investigations of shale-oil olefines indicate that as the homologous series ascends from C_{10} to C_{20} , the water solubility of the alkyl sulfates decreases until they are practically insoluble. Shale oil cuts for sulfation to detergents are, therefore, selected on basis of optimum detergent properties.

Shale oil differs from petroleum on several counts. Its most important feature being a high proportion of unsaturated hydrocarbons. Analysis of a kerosene gas oil fraction, boiling range of 199-309° C. had the following constitution:

	per cent
paraffins	31
naphthenes	11
aromatics	16
mono-olefines	26
di-olefines	16
alkenes and cyclenes	

A commercial plant for the sulfation of shale oil olefines uses a crude fraction with boiling range of 180°-330° C., and containing small amounts of nitrogeneous bases, tar acids, or phenols. These impurities are washed out with dilute sulfuric acid, and the treated stock charged to the detergent plant.

The oil feed is reacted with 96 to 98 per cent sulfuric acid at 10° to 20° C. The temperature is controlled by passing the acid-oil over brine cooled coils. The unsaturated components of the oil react to form mono- and di-

alkyl sulfates, which remain for the most part, dissolved in oil. A polymer tar also is formed, separated by centrifugal separators, and prepared for use as a liquid fuel.

The sulfated oil is neutralized with sodium carbonate and the sodium salts of the mono alkyl sulfates formed. These sulfates emulsify the unreacted oil to a cream-colored emulsion. The balance of the sulfated oil is added and the temperature raised to 90° C. Conditions are maintained for five to six hours and the yield of mono alkyl sulfates increased, due to hydrolysis of alkyl sulfates. Weak isopropanol is added to break the emulsion and dissolve out the sodium alkyl sulfates. Two layers form, the upper consisting of unreacted oil and alcohol, and the lower is an alcoholic solution of sodium alkyl sulfates. This lower detergent layer is washed of mineral oil, and the alcoholic solution stripped of alcohol and solvent, and concentrated by continuous evaporation. The concentrated detergent solution is filtered and stored.

Chemically, the detergent is an aqueous solution of organic active agents, predominantly of the sulfate type. It does not contain more than 5.5 per cent of inorganic salts. *Chemical Age* 43, No. 1617, 48-50 (1950).

Lavender Soap Perfumes

The lavender fragrance is one of the favorite scents for soaps, shaving preparations, and general toiletries for men. However, due to the high volatility of the compound, the fragrance of lavender oil is not very lasting, and fixatives play an important part in formulations including such oils. Benzylidene acetone is a good fixative for lavender soap perfumes. Lavender and lavandin oils yield a somewhat weak and fugitive odor when incorporated in soaps, unless combined with a large quantity of spike lavender oil. The latter covers up the fatty odor of the soap effectively, and has the advantage of being inexpensive. By using different proportions of artificial and natural lavender oils and spike lavender oil, it is possible to formulate soap perfumes suitable in cost for any grade of soap. *Schimmel Report* No. 173.

Emery Solid F. A. Booklet

Publication of a new bulletin, "Emery's Solid Fatty Acids," was announced recently by Emery Industries, Inc., Cincinnati. Complete information on specifications, characteristics such as stability, composition, quality, uniformity, and their effect on finished products utilizing fatty acids is included in the bulletin. Other factors such as processing methods and packaging are also covered by the comprehensive report, which is available by writing the firm at Carew Tower, Cincinnati 2, O.

A Small Water Softener

A small zeolite water softener for small boiler and industrial plants where the requirements may be under 100 gallons per minute was announced recently by Cochrane Corp., Philadelphia.

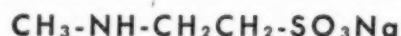
Designed for low initial cost, simplicity of operation and for low cost of chemicals used, the Cochrane junior industrial zeolite softener is supplied in two groups and in single and double units, to meet practically all requirements. Group I comes in 12", 18", 24" and 30" tank diameter, and Group II in 36", 42" and 48" tank diameter.

another versatile GA
intermediate for industry

N-methyltaurine

NOW AVAILABLE IN
EXPERIMENTAL QUANTITIES

(as an aqueous solution of the Sodium Salt)



You will want to use this versatile intermediate for making detergents, dyestuffs, pharmaceuticals or other organics. You'll find GA N-methyltaurine a valuable and economical building block which has interesting potentialities. (Other Taurine derivatives — Butyltaurine, for instance — with many possible applications are also available.)

N-methyltaurine is only one of a long line of intermediates now being made for industry by General Aniline & Film Corporation. If you have a product or process that might be improved by a cyclic or aliphatic intermediate, it will pay you to get in touch with us.

PROPERTIES OF N-METHYLTAURINE

APPEARANCE

- | | |
|-----------------------------|------------------------------|
| a. Near freezing point..... | clear, colorless solution |
| b. At freezing point..... | suspension of white crystals |

RANGE OF CONCENTRATION

- | | |
|---------------------------------|---------------|
| a. As Free Acid (MW 139)..... | 29.4 to 31.1% |
| b. As Sodium Salt (MW 161)..... | 34 to 36% |

TOTAL SOLIDS	40%
--------------------	-----

SPECIFIC GRAVITY AT 25°/4°C.....	1.21
----------------------------------	------

VISCOSITY AT 25°C.....	42 Saybolt seconds
------------------------	--------------------

FREEZING POINT (average).....	-28°C
-------------------------------	-------

ALKALINITY—N-methyltaurine is a weak base, and as such can take up one equivalent of acid. The GA product contains approximately 1.0% free caustic soda.

INDUSTRIAL CHEMICALS DEPARTMENT

ANTARA PRODUCTS

GENERAL
ANILINE & FILM CORPORATION

435 Hudson Street • New York 14, N. Y.

Soap Analysis Aid

In the analysis of soap stocks, a good solvent may be made from 67 per cent dioxane and 33 per cent water. This solvent prevents emulsification after extraction with petroleum ether, and prevents hydrolysis where hydrochloric acid is used for decomposition previous to the determination of fat. *Bull mens ITERG* 4, 165-168 (1950) through *Chem. Abstracts*.

Bacterial Stability of CMC

Stability tests of sodium carboxymethyl cellulose in combination with anionic commercial detergents indicate that bacterial decomposition is not likely to be a problem. A high viscosity CMC of two and one-half per cent, was used in solutions of the following anionic detergents: sodium alkyl sulfate, sodium alkyl benzene sulfonate, sodium lauryl sulfate, and sodium oleyl sulfate, at concentrations of eight, one, one-tenth, and one-hundredths per cent detergent. Solutions were incubated at 25°C., and bacterial counts were determined periodically up to 62 days. Solutions were then incubated at 32° for 18-24 hours, and colonies which developed were expressed as bacteria per ml. of original solution. An insignificant growth took place in the presence of any of the detergents at concentrations of 8-1 per cent. Maximum counts of 3.2×10^6 per ml. were observed in the control solution of 2.5 per cent SCMC. F. J. Pollock *Soap Perf. & Cos.* 23, No. 7, 711-712 (1950).

Fiber Sorption of Soap

Investigations of the sorption of textile fibers indicate that the process is quite complex, involving particularly the independent sorption of three components of the soap solution. Neutral (unhydrolyzed) soap, free fatty acid or acid soap, and hydrolytic alkali. Preferential sorption of alkali by cotton and viscose rayon was observed for all soaps. Nylon, acetate rayon, and wool showed preferential sorption of fatty acid with the lower molecular weight soaps, and preferential sorption of alkali with the higher soaps. In general, the order of increas-

ing order of sorption was: cotton, nylon, acetate, bright viscose, dull viscose and wool. The addition of .01 per cent of sodium hydroxide to the various soap solutions resulted in a decrease in the sorption of fatty acid by all fibers. A. S. Weatherburn et al *Canadian J. of Research* 28, 51-61 March, 1950.

Wetting Agent Analysis

A number of surface active agents in acid solution react with fuchsin to form magenta colored complexes. These complexes may be extracted with methyl chloride, and read photometrically. Excess fuchsin is not removed with the chloride, and thus does not interfere with the determination. *Anal. Chem.* 22, 616-617 (1950).

Silicate Determination

A rapid gravimetric method for determining silica oxide in laundering compounds is as follows: 15 milliliters of concentrated hydrochloric acid are added slowly to a mixture of two grams of the sample and 1.5 to two grams of ammonium chloride. The mixture is heated 10 minutes on the steam bath, diluted with 50 milliliters of boiling water, filtered and the precipitate ignited. Where there are no phosphates present, a colorimetric method of determination may be applied, using the color reaction with ammonium molybdate. *Fette u. Seifen* 51, 432 (1944).

Super Fattening Toilet Soap

A suitable oil mixture for use in making high grade toilet soaps is recommended, containing five to 10 per cent of coconut oil, arachi oil 10-15 per cent, and castor oil three to five percent. The soap may be superfatted with lanolin, although, a lanolin content above five per cent lowers the lathering power. Other satisfactory superfatting agents include *Lanette* wax, lecithin, and casein, in quantities of one to two per cent, five per cent, and five per cent, respectively. The lecithin should not be used where a pure white soap is desired, since as little as .5 per cent imparts a definite yellowish cast. *Manuf. Chem.* 21, No. 7, 298 (1950).

Lather Type Cream

A cleansing cream incorporating a synthetic detergent, depends on the detergent for the cleaning effect. A simple formula, for such a product which may be further elaborated, may contain: 10 parts cetyl alcohol, four parts beeswax, four parts paraffin wax, 20 parts mineral oil, 15 to 30 parts ammonium lauryl sulfate solution, and water to make 100 parts. *Schimmel Briefs* No. 184, July (1950).

Wool Optical Bleaches

The 4,4'-diaminostilbene derivatives of the general formula $\text{Ar-X-Co-NH-C}_6\text{H}_4\text{-CH=CH-C}_6\text{H}_4\text{-NH-Y}$ containing at least one anionic solubilizing group, have a high affinity for wool, with good light fastness and water fastness. They are colorless or slightly yellow powders, may be applied from an acid bath such as acid dyes, and impart blue to bluish green fluorescence. In the general formula indicated above, Ar is an aromatic group; X is preferably an -O-alkylene, e.g. -O-CH₂, or -O-NH-alkylene, -S-alkylene, -SO₂-alkylene, etc.; and Y is a 1-3-5-triazine residue, substituted in the 3- and 5-position. Swiss Pat. 263,256, Nov. 1949, through *Chem. Abstracts*.

Detergent Synthesis

Interaction of hydrocarbons with sulfur dioxide and oxygen is referred to as sulfoxidation. The reaction is applicable to a wide range of hydrocarbons, and works best with those having six to eight carbon atoms. The method is not suitable for hydrocarbons with chain lengths of 10-20 carbons, and therefore, is not adaptable, as such, to the manufacture of synthetic detergents.

Sulfoxidation has led to the development of a so called light-water process, which is applicable to the Kogasin II fractions (B.P. 230-320) from the Fischer Tropsch synthesis. Further work on this method, may lead to a suitable synthesis for detergents. *Chemical Trade Journal* 127, No. 3294, 194 (1950).

LEHMANN SOAP FINISHING MACHINES

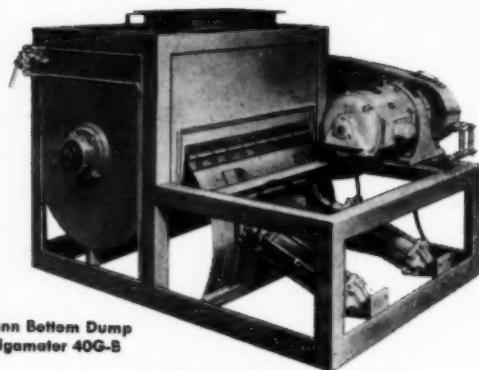
**can broaden
your profit margin!**

KEEP an eye on that all-too-thin black line—your profit margin. In the competitive markets for toilet soap and polished soap flakes you cannot readily widen the line by raising prices. However, you can often do things to it by reducing manufacturing costs. Manufacturers in many lines are resigned to the thought that increased profits must come, if at all, from further economies in production.

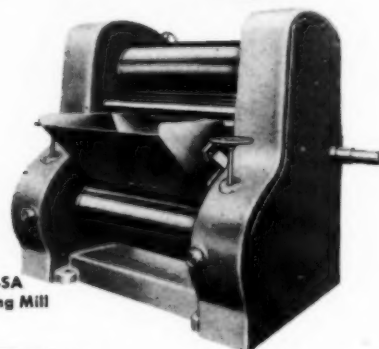
Look sharply at your soap finishing equipment—amalgamators, plodders, mills. Are there any weak sisters in the group? Maybe one of them should have been replaced long ago. Or could it be that you would gain by a complete new installation that would keep you up to, or a step ahead of competition for a long time to come?

Here is where Lehmann engineering "know-how", based on a century of machinery-building experience, can help you. Consider the installation of a complete Lehmann unit of amalgamator, preliminary plodder, roughing mill, finishing mill and finishing plodder. There is an advantage in ordering all from one manufacturer, with coordination among all the machines and with one responsibility.

*Send for descriptive bulletins
of any or all machines shown here.*



Lehmann Bottom Dump
Amalgamator 40G-S



Lehmann 924-5A
Four Roll Roughing Mill

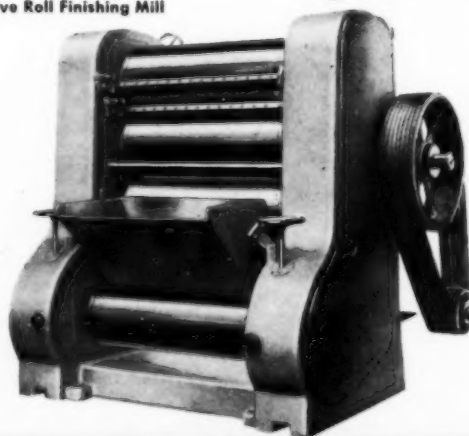


Lehmann 310-P
Preliminary Plodder



Lehmann 310-F
Finishing Plodder

Lehmann 912-5A
Five Roll Finishing Mill



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MAIN OFFICE AND FACTORY: 548 NEW YORK AVE., LYNDHURST, N. J.

By E. G. THOMSEN, Ph.D.

MANY concerns shun doing business with the world's largest customer because they are fearful of such transactions or because they do not understand the procedures involved in selling to the U. S. Government. Once this sort of business is established, however, most companies find it profitable. In time of war, of course, it is patriotic as well. Those who complain about unsatisfactory transactions do so mainly because they have not taken the time and trouble to understand government purchasing procedures. Of necessity, the government purchasing operation is large and complex.

To complain about government red tape and bureaucracy is understandable, but most of us forget that we individually are the government. If we do not understand its operation in any branch we may learn about it by proper research or contacts. Individuals who do know the purchasing procedure are always available for advice and guidance.

Chemical specialties comprise but a few of the multitude of products that are purchased. Various departments buy for their particular branches in different cities. Specifications are provided or are available through the U. S. Specifications Board.

It is not within the scope of this article to discuss methods of selling government departments. It should be remembered, however, that whoever approaches certain federal purchasing departments should know his "stuff," because specifications for the chemical specialty products are technical and fairly complex to the uninitiated. For that reason, a technically trained salesman makes a better impression than one who cannot visualize what lies behind and before a particular product. Once a salesman knows his way around in government

purchasing circles, it is really easier to get sales inquiries from this source than from privately owned companies or retail channels. Purchasing people



DR. THOMSEN

are governed generally by regulations. It is a very rare occurrence for them to deviate from these regulations. Every bidder has his fair chance if he abides by the rules.

The sales approach to government business probably is not as difficult as estimating costs and producing the goods after the inquiry is received and the order is obtained.

Many bidders are under the impression that all that is necessary to obtain a government order is to quote lower prices than their competitors. By doing so, they assume that the order is automatically theirs. While this is true in part, it is also very necessary that the bidder be able to turn out the product under consideration in the quantity desired, under proper supervision, and to fill all the other contract requirements. It is foolhardy for any company to bid on items which it cannot carry through on completely. If a bidder falls down in fulfilling his contract obligations properly, it may prove un-

comfortable in more ways than one, even though government purchasing agencies have the reputation of being very fair in re-negotiation deals.

When an inquiry is received, the production department should play an important role in filling out properly the bid forms which seem cumbersome to the uninitiated. In preparing forms, several important factors are involved. Included are: first, a comprehensive understanding of all the details of the specifications, usually indicated by a code number or reference. If not understood, it is good policy to write to the particular division for elucidation of any sections that are not clear. Unless a bidder can meet the specifications, he should not proceed further. With many products an inspector comes right into the bidder's plant to observe carefully that the specifications are adhered to. Rejection of unsatisfactory goods is expensive, so it is well to know all about them even before bidding. Second, the packaging requirements should be considered carefully so as to be certain production equipment is suitable for the particular demands. Third, production costs should be analyzed carefully and determined accurately. It is not uncommon for the government to request that their products be handled quite differently from usual plant routine. Changes of this kind may cost more than is supposed and should be calculated carefully. Fourth, should it be impossible to comply fully with the provisos, it is possible to set forth a bidder's ability to produce certain goods in another manner. Sometimes these qualified bids receive further consideration and are awarded on this basis. Fifth, be sure all copies of the bids, usually three in number, are uniform and correct. The envelope should be addressed in correct detail to the government agency so that it reaches the right individual.

With our government again requiring many items for rearmament purposes and for the maintenance of our armed forces, demands for products in the sanitary chemical field will increase. All companies have an opportunity to serve their government

DRYMET*

THE ECONOMICAL DETERGENT SILICATE

Cowles DRYMET, anhydrous sodium metasilicate, is the most highly concentrated form of sodium metasilicate available. It is more economical to use, on the basis of both Na_2O (alkalinity) and SiO_2 (silicate) than any other type of hydrated or anhydrous detergent silicate, either compounded or by itself. DRYMET contains no water of crystallization.

DRYSEQ*

THE ALL-PURPOSE DETERGENT SILICATE

Cowles DRYSEQ, anhydrous sodium sesquisilicate, is a medium pH alkaline cleaner which will do fast, dependable work at a low cost to the user. It is a white, free-flowing powder, quickly and completely soluble in hot or cold water—containing 56.75% Na_2O —making it an economical base material for compounding.

DRYORTH*

THE HEAVY-DUTY DETERGENT SILICATE

Cowles DRYORTH, anhydrous sodium orthosilicate, is a powerful, speedy, heavy-duty cleaner with valuable penetrating and wetting-out properties, reinforced dirt-removing power and unusual emulsifying action. It is an anhydrous, free-flowing powdered silicate containing not less than 60% Na_2O , which may also be used as an economical constituent of high pH cleaning compounds.

CRYSTAMET*

THE MEDIUM pH DETERGENT SILICATE

Cowles CRYSTAMET is a pure, perfectly white, free-flowing granular pentahydrate sodium metasilicate with the normal 42% water of crystallization. Suggested for compounding when it is desirable to lower the concentration of a finished product. Readily soluble—chemically stable—easy to handle. Can be used on medium pH jobs.

Cowles Chemicals

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HEAVY CHEMICAL DEPARTMENT

• CLEVELAND 3, OHIO

in the present emergency. Those desiring to do so but not familiar with the correct procedure can ascertain the details of selling the government and filling its orders. Following large appropriations for maintenance of our armed forces, the government will purchase many of the products made by our industries. Many business men are again visiting Washington and other points where supplies are purchased. Those who do not fully understand the methods of government purchasing, but are interested in this business, may well take some time off to learn the ropes themselves.

Novel Blender

MANUFACTURERS of powdered products who desire to economize on their processing operations may be interested in the "RTR Uni-Blendor" built by A. E. Paulsen & Co., Los Angeles. This unit elevates, mixes, micro-blends and packages powdered materials in a one-man operation. Coming in three standard sizes, the blender is preassembled and may be installed directly on any floor having a 13 ft. ceiling height. No special foundation is needed. It may be built to suit special requirements. Usually four or more batches per hour are handled. A special folder describing this machine fully is available upon written request.

Drum Seal

A self-locking seal that may be attached by simple pressure of the finger, without any tool, is offered by Stoffel Seals Corp., Tuckahoe, New York. It is used particularly for drums and barrels, and assures a tamper-proof package. The seal may be lithographed, embossed or code-marked. It can be applied by string, cord, ribbon or wire. When removed, it cannot be reused. Samples and further information are available.

Bulk Materials Handling

THE Tote System for handling large quantities of powdered bulk materials is becoming increasingly popular. With this method, Tote bins, consisting of easy to handle aluminum containers having a capacity of 74 cubic feet, are used. Special openings

for filling and discharging are provided. These vents are so tight fitting that when the bin is filled contamination and deterioration are retarded. Spillage, dusting and waste of labor are reduced to a minimum. Rail or truck may be used to convey the Totes from coast to coast. An informative folder may be had by writing Tote System, Inc., Beatrice, Nebr.

Check Weighing Scale

A new principle for precision weighing has been developed by Exact Weight Scale Co., Columbus, O. A light ray is substituted for a mechanical indicator. By the use of this method, a very high degree of accuracy is obtained. The scale is electrically operated and noiseless in use. Among its applications are check weighing for over or under weight and weighing of small batches for accurate compounding purposes.

Drum Agitator

AN efficient agitator that may be operated by hand or power is offered by American Pulley Co., Philadelphia. It is particularly suitable for mixing batches in drums and barrels. The new American Pulley agitator is so designed that when in operation it brings up and quickly disperses any heavy or solid material on the bottom. Any material that adheres to the inside of a drum is loosened by a sweeping arm chime scraper. Provision is made to fasten the agitator securely to both top and bottom of a drum so it is not readily dislodged.

Compression Packer

A NEW compression type packer that may be used for packaging powdered products such as soap powder, detergents and insecticides is now being offered by Union Bag and Paper Co., New York. The machine is flexible and handles one to 25 pound round or square shipping containers by easy, fast adjustments. It will operate at a top speed of 15 packages per minute. Among the advantages claimed are labor economy, reduction in size of shipping containers, less crushing of packages and better adaptation to shipping and palletizing

without damage to individual packages.

Handling Liquid Caustics

THE improper handling of liquid caustic soda and potash in unloading tank cars has resulted in some unfortunate accidents. For 20 cents one may obtain Manual Sheet TC-3 by addressing The Manufacturing Chemists Association, 246 Woodward Building, Washington 5, D. C. This sheet has been revised completely. It recommends the best practices for the procedure and sets forth safety precautions.

"Tygon" Paint Data

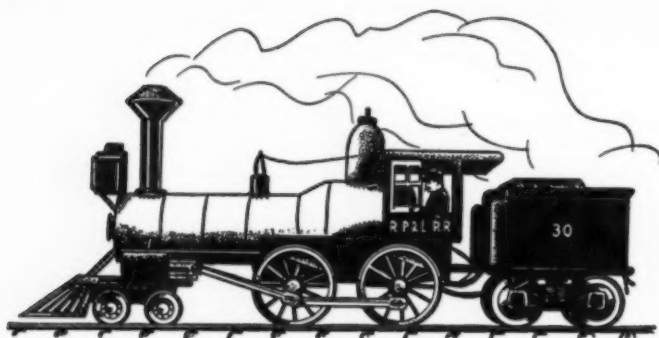
A 12-page bulletin on "Tygon" corrosion-resistant paint was issued recently by U. S. Stoneware Co., P.O. Box 350, Akron 9, O. The booklet, which is illustrated, tells where and how to use "Tygon" paint, and where not to use it. In addition, the bulletin contains a table showing the effect of various chemicals on the paint.

Intermediate Benzophenone

An "intermediate" grade of benzophenone, one application of which is for insecticides, has been made available by Kay-Fries Chemicals, Inc., New York, it was announced recently. The step has been taken to stimulate use of the material in commercial chemical synthesis, according to the company. A perfume grade has long been available. Considerable savings in production costs have been effected on the new "intermediate" grade, with the result that the price is reduced by about 20 per cent. A technical data bulletin is available.

Lather Spray Detergent

"S. S. Spray," a new synthetic detergent designed for immediate application for the quick removal of oil and grease from skin areas of injured industrial patients before antiseptics or other medication can be applied, was announced recently by Gebauer Chemical Co., Cleveland. Lather is produced immediately as the "S. S. Spray" detergent is put up in a "Dispenseal," hermetically sealed container that dispenses the detergent by press-



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Babassu	Olive
Castor	Palm
Cocoonut	Peanut
Corn	Sesame
Cottonseed	Soybean

ANIMAL FATS

Sperm Oil	Grease
Oleo Stearine	Tallow
Lard Oil	Lanolin
Neatsfoot Oil	

FATTY ACIDS

Red Oil	Tall Oil	Tallow
	Stearic Acid	
	Hydrogenated Fatty Acid	
	Cottonseed and Soybean	
	Fatty Acids	

ALKALIES

Caustic Soda, Solid, Liquid, and Flake
Soda Ash, Light and Dense
Carbonate of Potash, calcined and hydrated
Calcium Chloride
Tri Sodium Phosphate
Tetra Pyro Phosphate
Quadrafos Granular and Beads—a stable polyphosphate for water conditioning and mild but effective detergency.

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META SILICATE—"Metso"* Granular, "Metso"* Detergents—99, 22, 55, 66.

MAYPONS—Unique surface active agents; prolific foam; high detergency and emulsifying powders; suitable for cosmetic and industrial use.

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New "S.S. Spray," left, a product of Gebauer Chemical Co., Cleveland, is designed for emergency use in industrial dispensaries. Product is a detergent that lathers on being ejected from "Dispenseal" bottle. No water is required to cleanse with the spray, which is said to be non-irritating.

ing a lever. No water is required with the detergent. Another of its uses is for the removal of ointment dressings and as a detergent for soap-sensitive skins.

Hydraulic Lift Dissolvers

Cowles Co., Cayuga, N. Y., has just announced two new hydraulic lift dissolvers—Models 10D-1H and 20D-2H.

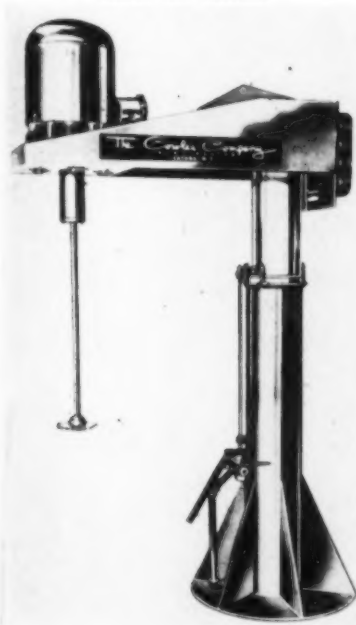
Both models are standard dissolvers intended for plant operations where it is faster and more convenient to process materials in tanks brought to the machines. The impeller raises and lowers hydraulically by water pressure so that it clears the top of containers and can be positioned cor-

rectly for the maximum dissolving or dispersing effect.

The bridge on Model 20D-2H, which carries the dissolver unit, swings in an arc so that several containers can be set around the dissolver permitting continuous machine operation while processed tanks are removed and unprocessed tanks substituted. Model 10D-1H, is a scaled down version of Model 20D-2H. Its lift is 38", containers ranging between 12" and 40" are normally used and larger ones may be used by offsetting the tank from the impeller shaft. Its maximum available power is 15 HP, 1800 RPM motor with 1 1/4" shaft. The bridge carrying the impeller rotates through 360°.

Model 10D-1H is available with a variable-speed V-belt drive.

Cowles Lift Dissolver



Govt. Buying Directory

A new 112-page book, "1950 Directory of Federal Purchasing Agents," which indexes about 6,000 different items purchased regularly by the Federal Government, was published recently by Statesman Press, National Press Bldg., Washington 4, D. C. The price of the book is \$4.

Booklet On Caustic Soda

"Economic Handling of Caustic Soda with Variable Area Meters," a booklet offered by Fischer & Porter Co., County Line Road, Hatboro, Pa., was announced recently. It deals with the advantages of purchasing high-concentration caustic soda and diluting immediately during unloading, thus saving freight costs by shipment of less water. Special meter design, piping arrangements, dilution calcula-

tions and pump layout are also discussed in detail.

Caustic uses throughout the plant are discussed, as well as meter banks for economical pumping, and control instruments used in maintaining pH are also developed.

For a free copy, write the company, care of Dept. TB-21, Hatboro, Pa.

New Whirlwind Capper

The redesigning and equipping with a more powerful Universal current motor of the "Whirlwind" portable screwcapper was announced recently by Scientific Filter Co., 57 Rose St., New York. In addition, the weight of the capper, Model A, has been reduced to 4 1/2 pounds. The redesigned capper features an extra long suspension spring which permits the capper to be suspended from the ceiling or any overhead point and yet cover a wide area of operation. The capper will tighten either metallic or molded caps at a speed of about 30 to 50 caps per minute.



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Samples
and
Literature

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PRODUCTS AND PROCESSES

New Silicone Polish

A cleaner and polish formulated without wax, contains silicone oil, an abrasive and solvent. The silicone produces a gloss and leaves a protective film; the abrasive removes chalked enamel; and the solvent helps clean and remove the old wax and oil film. A cleaner and polish including wax is added. In this case, the silicone serves as both a plasticizer and protective and gloss factor. Omitting the abrasive from either of the above formulas will yield a polish instead of a polish-cleaner. Without the abrasive, about two per cent silicone is sufficient; formulas including the abrasive require about four per cent silicone, due to the absorbency of the former. *Chemical Industries* 66, No. 6, 820-831 (1950).

New Wax

A wax suitable for use in combination with beeswax, petroleum wax, or carnauba wax, and raising the melting point of these waxes, is formed by refluxing one mol of $\text{Cl}(\text{CH}_2)_4\text{Cl}$ with a mixture of hydrogenated cardanol(3-pentadecylphenol)2 in 2.5 parts of sodium hydroxide and 96 parts of water. The refluxed mixture is neutralized and washed with water, dried and recrystallized from petroleum ether, yielding 1,4-bis(m-pentadecylphenoxy)butane. U. S. 2,503,731.

New Mothproofing Process

A method suggested for mothproofing involves changing the disulfide bond, $\text{C}-\text{CH}_2-\text{S}-\text{S}-\text{CH}_2-\text{C}$, to $\text{C}-\text{CH}_2-\text{S}-\text{CH}_2-\text{S}-\text{CH}_2-\text{C}$, by chemical reaction. The disulfide bond is the special linkage in the wool molecule, which imparts strength and insolubility to wool fibers. It is generally supposed that the destructive action of the moth grubs is made possible by an enzyme in the intestinal tract, which is capable of breaking the disulfide bond.

The change in bond, referred to above, has been made in the labora-

tory by reduction with calcium thioglycollate, followed by relinkage with methylene dibromide. The reagents are costly, and not applicable to commercial operations. However, recent studies indicate that cheaper reagents may be used, e.g., sodium hydrosulfite and formaldehyde. These, or perhaps other agents, may possibly be used successfully in commercial processes. *Chemical Age* 62, No. 1606, 573-574 (1950).

Antiseptic Deodorant

A solid antiseptic deodorant for use in lavatories, drains, kitchens, cupboards, and the bath, is made with pine oil as the active ingredient. The product has a specific gravity of less than one, floats in water, dissolving slowly to form a milky emulsion with high deodorant properties. The product is light amber in color, and is soft enough to be cut easily with a knife. *Chem. & Eng. News* 28, No. 28, 2358 (1950).

Non-Irritant Shave Cream

A formula suggested for the preparation of a satisfactory shaving cream contains:

	Parts
Coconut Oil	10.0
Castor Oil	2.0
Fatty Acid (Myristic)	5.0
Stearic Acid	25.0
Potassium Hydroxide (89/90)	9.5
Borax .....	.5
Diglycol Stearate	2.0
Stearyl Alcohol	1.0
Liquid Paraffin	1.5
Sorbitol	5.0
Water	45.0

Diglycol stearate is used in the formulation because glyceryl monostearate breaks down in the presence of borax, and is apt to give a slight granular effect. The liquid paraffin helps toward a white mass, and is a good buffer against irritation. Sorbitol serves as a good humectant and helps in manipulation.

Potash and borax are added to

the water in a stainless steel container, and stirred until dissolved. To this solution, the oils and fatty acids are added without any previous melting; saponification begins due to the heat of reaction. The container is next heated on a water bath, and the mixture stirred until saponified. The remaining solids and mineral are added without any preconditioning, and the whole batch stirred slowly. The batch is then left in the water bath for an hour, following which the sorbitol is added. C. Doubleday, *Soap Perf. & Cos.* 23, No. 7, 715-717 (1950).

Insect Repellents

A product designed for use on humans as an insect repellent contains the following in parts by volume: 2-ethyl-1, 3-hexanediol, 10 parts; phenolphthalein, one part; glycerine, two parts; and alcohol, two parts. The ingredients are blended and mixed with an excess of sodium carbonate. *Glycerine Facts*, June (1950).

Polyphosphate Insecticide

The reaction of two mole parts of P_2O_5 or ethyl metaphosphate under autogenic pressure at temperatures up to 180°C ., yields a product with good insecticidal properties. The mixture contains considerable water-soluble polyphosphate, with four to ten ethoxy groups and two to eight phosphorous atoms in the molecule. The product is isolated by distilling off the ether under pressure conditions not below 50 mm. U. S. Pat. 2,492,153.

Phenol Alkylation

Alkylated derivatives in 75 per cent yield may be obtained by alkylation of phenols at 140° with 1.5 per cent zinc chloride and hydrochloric acid gas. The zinc chloride, with or without the hydrochloric acid, functions as a catalyst in the alkylation. Zinc chloride may be prepared by reacting ZnO with HCl ; it is preferred to suspend the ZnO in the phenolic component, add the olefins, and then add the HCl to the mixture during the reaction. Dutch Pat. 64,991 through *Chem. Abstracts*.

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WEST COAST REPS., Peter D. Bowley & Assoc., 210 Mississippi St., San Francisco, Calif.

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Ask yourself these questions

● What makes red oil red?

The answer is color bodies and other impurities which are not removed from the fatty acids by the usual processes such as distillation and filtration. These impurities not only make the Red Oil red, but they give it the strong odor usually associated with this product. In addition, these impurities make the Red Oil unstable in color when heated in processes such as esterification and saponification.

All grades of W. C. Hardesty Co., Inc., distilled Red Oil have these impurities removed in their *regular plant processing*. Our regular Red Oils are not red but amber in color with a very bland odor and maximum stability to withstand high temperatures without discoloration or oxidation. Our best salesman is a sample. Send for yours today, and compare the color with any other commercial Red Oil.

1005 Low Titre Redolene Distilled Oleic 3-5°C Titre
1010 Redolene Distilled Oleic 8-10°C Titre

For especially light colored products, we recommend the use of our White Oleic Acid, which is in a color class by itself.

1020 Crystolene (White Oleic Acid) 6-8°C Titre

● Is distillation of stearic acid enough?

Since the beginning of the fatty acid industry, producers have relied upon distillation as the means of purifying fatty acids for the production of Stearic Acid.

Distillation is not enough to remove the impurities from the fatty acids. The average commercial Stearic Acid shows this by its relatively dark color, and poor odor and color stability when it is used in making esters and high grade cosmetic soaps and creams.

The W. C. Hardesty Co., Inc., chemists have developed methods of purification of the fatty acids for Stearic Acid production which go far beyond distillation and the purity is guarded through each step in the process of manufacture. This accounts for the excellent color and odor of our Stearic Acids and for the stability of the color and odor when the Stearic Acids are processed in customers' plants.

To produce highest quality esters, soaps and cosmetic preparations, use our Stearic Acids . . . generous testing samples will show you why.

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1240 Supra Grade Stearic Acid



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By John W. McCutcheon

NO INDUSTRY these days can stand still technically and expect to hold its position. These borrowed words of wisdom are particularly applicable to the soap industry today, a fact often emphasized in this column. There is no question that the soap industry on a volume basis is alert and has been alert for many years. It is not so certain, however, that this could be said if we counted heads and not pounds. The smaller companies of the industry have a tendency to follow the leader with the result that the profit cream has often been stripped from a new development or product before the small fellow can get going. It is not intended to imply that the smaller concern is not eager to seize new opportunities as they come along. Often the exact reverse is true. It does mean, however, that too often the smaller concern is unwilling or cannot afford to spend the necessary sums on research to develop ideas into sound paying propositions. It is a case of the man with the one talent thinking he hasn't much anyway, so he will just bury it so it can't get away from him.

Research is a tool of modern industry. It is the headlight pointing the way forward. The brighter the light, the further you can see and the faster you go forward. When no research is done, you are stumbling around in the dark lighting matches to find the road. It is a fact that small companies can spend only a small amount on research. This amount, however, should be larger in proportion to capital expenditure than that of a large company.

In addition, the advice gained from research should be followed. The small company, often dominated by one or two individuals, is very prone to pay for advice and then throw it

out the window because it doesn't agree with their feelings on the matter. For example, a small company a few



years ago spent \$1000 seeking advice as to why their product was not selling. The results of the survey indicated that the product failed in packaging, price and product quality. Without attempting to correct the faults as indicated, a \$2500 a week radio advertising campaign was started with the idea to sell the product "or else." The "or else" came in first.

Laying aside the philosophical cloak, let us define the broad meaning of research and see where it leads us. The first step in research is being aware of what has been done. This is obtained by reading the trade journals, chemical abstracts, patents or the newspapers. As my good friend Dr. Thomssen says, "Gaining up-to-date information on scientific and trade matters is one of the most important duties of plant and laboratory men." ("Production Clinic" Soap & Sanitary Chemicals, 67-68, July 1950.)

The second step is the study of ways and means to apply new ideas to your own problems. This may be done with no more equipment than pencil

and paper or it may mean such expensive items as molecular stills, spectrophotometers, etc. It usually requires the help of specially trained personnel.

One way for the small company to obtain the necessary equipment and personnel at low cost is to rent it, as you would a typewriter. This is done by hiring a consulting firm specializing in the field. This will be dealt with more fully in a separate article. Another way is for several small companies to pool their interests and buy the necessary service and equipment. This sort of operation has proven very successful in the dairy industry. Sometimes this same objective can be obtained through group associations. In fact, very often extensive reports by trade associations, available for the asking and prepared at considerable expense, are overlooked through ignorance of their existence. A third method is through contact with government laboratories. For example, the Eastern Regional Research Laboratory at Philadelphia has a department on animal fats and detergents. Of course a government laboratory could not undertake private research, but it does work on fundamental problems of interest to the Oil Industry and it does make available to the public the data so obtained. For example on a recent visit to the laboratory mentioned, a series of interesting co-polyvinyl esters of long and short chain fatty acids were observed which varied in properties from dry white powders to sticky gums with possible use in all types of products from paper to glues. This may seem a long way from soap. However, bear in mind that the first druggist to sell an umbrella was considered quite eccentric, too.

The rapid changes in the soap industry in recent years ought to be indicative of something. Last month, we pointed out the recent interest in ethylene oxide as an organic raw material. If the sale of non-ionics ever reached the tonnage presently enjoyed by the alkyl aryl sulfonates it would appear that their production within the industry itself is a possibility, just as silicate manufacture became a part of the industry when tonnages ran to

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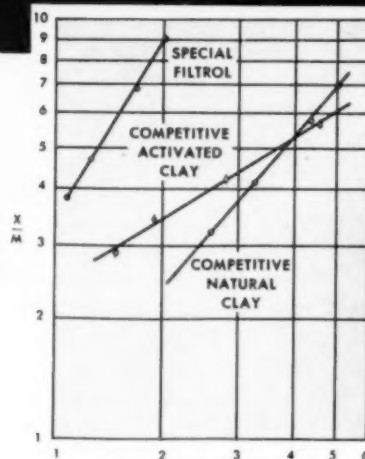


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The March, 1949 issue of THE JOURNAL OF THE AMERICAN OIL CHEMISTS SOCIETY reported that the adsorbent activity of activated clays is greatly superior to that of natural earths. Special Filtrol was demonstrated to be over twice as active as other activated clays. It was further stated that the optimum decolorizing temperature, when special Filtrol is used, is approximately 25° C. lower than when natural earths are used.

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high figures during the period 1890 to 1920.

Although the soap industry has always been reluctant to enter into any complicated chemical operation, it has broken the ice in recent years with the advent of synthetic detergent manufacture. The last large company to enter this field (Lever Bros. Co.) still keeps one foot on the shore by having the intermediate prepared by a company specializing in organic syntheses. (Dow Chem. Co.)

LAST month a formula for a cold made coconut oil soap was given. A few comments with respect to variation of the formula should be noted. For example, if the coconut oil has a high fatty acid content, such as five to seven per cent, the saponification will be quite rapid, so that the crutcher may be dropped in three to five minutes. The free acids react immediately with the alkali, the soap formed emulsifies the oil and alkali thoroughly and so aids saponification. On the other hand, if the free acids are below 0.5 per cent, there is insufficient soap formed initially to cause emulsification. Under such conditions, it may be necessary to crutch for an hour before dropping. Low fatty acid oils will give a smooth close grained bar of soap. High fatty acid oils tend to give a coarse grained soap.

The height to which the charge rises in the crutcher is important. It should flow over the top smoothly when crutching up. To aerate, the worm is reversed. By proper adjustment of height and time of crutching it is quite easy to obtain a product having a density of anywhere from 1.0 to 0.6. Hardness of the finished bar is controlled through the aeration and super-fat. Bars having superfats below 0.5 per cent are very hard, those of from four to six per cent are very soft. If tallow were substituted for coconut oil, allowance should be made for the difference in alkali requirements to saponify each. Thus, 50 per cent of the 566 pounds of CNO would be replaced by 370 pounds of tallow. To increase or decrease the superfat one per cent, add or subtract 10 pounds of fat or oil from the formula.

The fatty acid content of the

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A new, all-way adjustable swivel mixer mounting bracket that has been developed for use with Alsop



New Alsop Bracket

standard mixing tanks was announced recently by Alsop Engineering Corp., Milldale, Conn. Features of the new bracket include fast adjustment to any desired mixing position; self-contained hand bar locking device to lock the mixer in any operating position quickly, easily and without wrenches; availability with any type mixer for Alsop stainless steel open type tanks of from five to 300 gallons capacity; permanently attached, yet fully adjustable.

Fatty Alcohol Data Sheet

A new data sheet showing typical analyses of "Cachalot" fatty alcohols is now available to chemical manufacturers and distributors, it was announced recently by M. Michel and Co., New York. The listing covers cetyl, oleyl and stearyl alcohols, and

product may be increased or decreased by making the caustic alkali solution stronger or weaker. For example, increasing the water from 143 to 243 pounds in the formula would reduce the fatty acid content of the bar from 60 to 55 per cent. Many other combinations can be worked out from the above to meet any type of situation.

mixtures of them, of interest to chemical specialty manufacturers and drug and cosmetic formulators.

Cellulose Warning Tape

Cellulose tape, printed in vivid colors with the words "poison," "corrosive" and "flammable" is now available in roll form with a heavy cast dispenser, it was announced recently by Fisher Scientific Co., Pittsburgh. The tape is 1/2-inch wide, and each printed portion, when cut off by an integral serrated edge, is about 3 1/2 inches long. Each roll contains approximately 200 printed portions.

Soap Corrosion Report

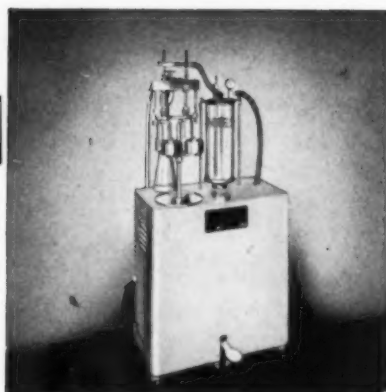
A summary of the results of corrosion tests of operating equipment used in soap and fatty acid plants is contained in a paper presented by J. F. Mason, Jr., and Wayne Z. Friend before the Fifth Annual Conference of the National Association of Corrosion Engineers and now available in booklet form from International Nickel Co., 67 Wall St., New York 5.

Sixteen pages in size, the booklet contains illustrations, flow charts, tables, and other technical information of value to research and operating engineers.

Tests in the boiled soap process and glycerine recovery include those in soap kettles, caustic storage, brine tanks, acid and alkali treatment and filtering of soap lye, salt-glycerine slurry, salt-glycerine evaporators and glycerine stills, glycerine bleaching and storage.

Tests in fatty acid processing include those in Twitchell and high temperature water splitting of fats, acid washing of fats and fatty acids, deodorization, heating and distillation of animal and vegetable fatty acids including tall oil, fatty acid storage.

All tests did not include all of the same metals and alloys but the program included a wide variety of materials such as nickel, Monel, Inconel and other high nickel alloys, stainless steels, copper and copper alloys, aluminum, chemical lead, mild steel, alloy steels and plain and alloy cast irons. Test results are evaluated where possible.



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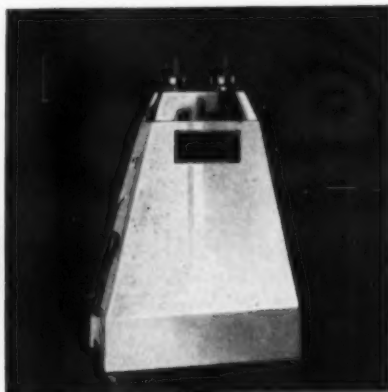
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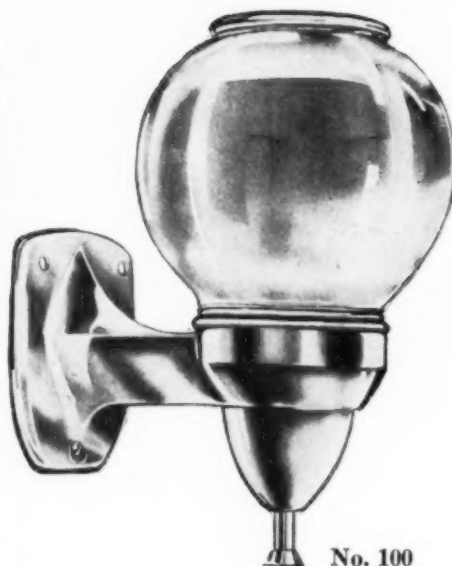
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PATENTS

The information below is furnished
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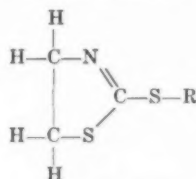
402 Bowen Building
Washington 5, D. C.

The data listed below is only a brief
review of recently issued pertinent
patents obtained by various U. S.
Patent Office registered attorneys
for manufacturers and/or inventors.
Complete copies may be obtained
direct from Lancaster, Allwine &
Rommel by sending 50c for each
copy desired. They will be pleased
to give you free preliminary patent
advice.

No. 2,516,616. Lubricating Oil
Detergent, patented by James O. Clay-
ton, Berkeley, and Dorr H. Etzler,
Albany, Calif., assignors to California
Research Corp., San Francisco, Calif.,
a corporation of Delaware. The patent
covers a composition of matter con-
sisting essentially of a major propor-

tion of a mineral lubricating oil which
is susceptible to deterioration when
exposed to oxygen and, in an amount
sufficient to improve the detergency of
said lubricating oil a polyvalent metal
salt of a seleninic acid.

No. 2,516,313. Insect Controlling
Composition Comprising an Alkyl 2-
Thiazolinyl Sulfide, patented by Avery
H. Goddin, Newark, and Norman E.
Searle, Wilmington, Del., assignors to
E. I. du Pont de Nemours & Co., Wil-
mington, Del., a corporation of Dela-
ware. An insecticidal and insectifugal
composition is described containing as
an essential active ingredient in ad-
mixture with a wetting agent a com-
pound having the formula



in which R is an alkyl radical contain-
ing at least four carbon atoms.

No. 2,515,880. Production of
Granular Detergent Mixtures, pat-
ented by James Douglas MacMahon,
Niagara Falls, and Lorenzo D. Taylor,
Lewiston, N. Y., assignors to Mathie-
son Chemical Corp., a corporation of
Virginia. The patent covers a process
for granulating dry powdered deterg-
ent mixtures of such particle size that
a major portion passes through 65-
mesh (Tyler) and which consist of
soda ash and at least one material
selected from the class consisting of
sodium silicate, sodium bicarbonate
and sodium phosphates which com-
prises mechanically agitating the dry
powdered mass in the presence of
water which is slowly added in an
amount exceeding about 10 per cent
by weight of the mass but between
about 70 to 95 per cent of the water
required to convert the dry powdered
mass to a paste wherein there is just
sufficient water to form the continu-
ous phase and convert the free-flow-
ing mass to a unitary mass, and
screening the granulated mass to re-
cover the fraction within the size
range of 20 to 65 mesh (Tyler).

No. 2,514,608. Method of Sepa-
rating Glycerides, patented by Victor
J. Muckerheide, Cincinnati, Ohio, as-
signor to Emery Industries, Inc., Cin-
cinnati, Ohio, a corporation of Ohio.
A continuous method of separating
mixed triglycerides containing satu-



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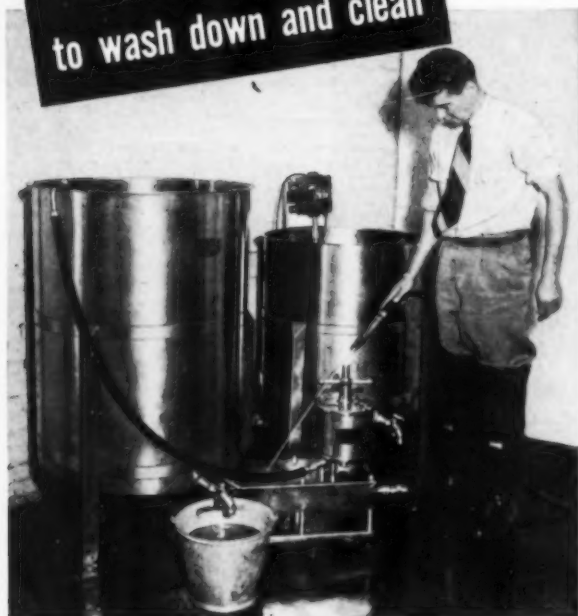
Murray Hill 6-0661

CABLE ADDRESS: BISULPHIDE, NEW YORK

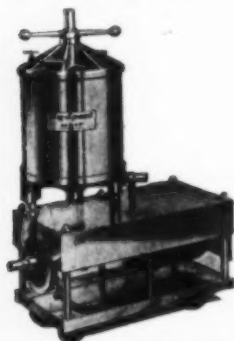


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necticut.

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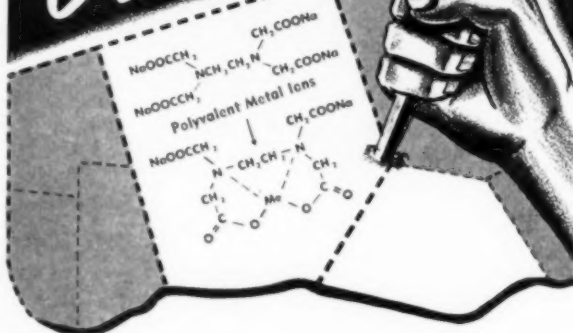
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rated and unsaturated components into fractions of different melting points is described, said method involves pumping liquid triglyceride continuously into a flowing stream of solvent, the solvent characterized by a limited solubility in water of between 1 and 25 per cent by weight at 20° C. and by a limited solubility for water of between one and fifteen per cent by weight at 20° C., the glycerides being added at a rate effective to provide a solvent solution of thirty to fifty per cent concentration by weight, then continuously passing the solution through a counter-current type of chiller and continuously cooling the stream of solution at the rate of at least 0.75° C. per minute to form solidified glycerides on the walls of the chiller, removing the glycerides solidified at each local area of the chiller regularly at intervals of substantially every three to six seconds, then continuously conducting the slurry thus constituted through a filter and separating the solidified glyceride from the slurry, and evaporating the solvent for reuse.

A process of separating natural triglycerides into solid and liquid fractions which comprises dissolving the triglycerides in a solvent of the class consisting of isopropyl acetate, ethyl acetate and methyl isobutyl ketone, chilling the resulting solution rapidly to effect a precipitation of the more

solid triglycerides, removing the solid triglycerides from the liquid triglycerides remaining in solution in the solvent, and then recovering the separated glycerides from the solvent.

No. 2,514,621. Insecticidal Compositions Comprising Either Hexyl Alkyl Tetrphosphate or Tetra-Alkyl Pyrophosphate and Either an Alkali-Metal Fluoride or Fluorosilicate, patented by Alan Bell, Kingsport, Tenn., assignor to Eastman Kodak Co., Rochester, N. Y., a corporation of New Jersey. Covered is an improved phosphorus-containing insecticide having increased longevity and containing as essential ingredients a phosphate compound from the group consisting of hexa alkyl tetra phosphates and tetra alkyl pyrophosphates the alkyl being of less than four carbon atoms together with a small content of a water-soluble fluorine-containing compound from the group consisting of fluoride and fluorosilicates of the alkali metals, said small content being sufficient when in cooperative relation with said phosphates to impart the increased longevity, but insufficient when said fluorine-containing compound is considered alone to account for the changed toxicity of said insecticide.

No. 2,514,714. Insecticidal Composition Containing a Resinous Clay Tower Polymer patented by Edwin G.

Marhofer, Bartlesville, Okla., assignor to Phillips Petroleum Co., a corporation of Delaware. An insecticide composition is described comprising an effective quantity of a contact insecticide and a resin, derived from the polymeric residues obtained from the clay tower treatment of gasoline, selected from the group consisting of those resins having a solids content of 60 to 70 weight per cent, an A. P. I. gravity of 15 to 20 and a Gardner-Holdt viscosity of B to H, and those resins having a softening point between 140 and 160° F. and an iodine number between 220 and 250.

No. 2,510,428. Bactericidal and Bacteriostatic Preparations 2,3-Diaryl Indoles, patented by John H. Standen, Yonkers, N. Y., assignor to The B. F. Goodrich Co., New York, N. Y., a corporation of New York. A bactericidal and bacteriostatic preparation is covered comprising from 1.0 part per million to 5 per cent by weight of 2,3-diphenyl indole dispersed in water.

No. 2,510,432. Insect Proofing Woolen Fabrics with 2,3-Diaryl Indoles, patented by William D. Stewart, Yonkers, N. Y., assignor to The B. F. Goodrich Co., New York, N. Y., a corporation of New York. The patent describes a woolen fabric containing 0.5 per cent to 1.0 per cent by weight of 2,3-diphenyl indole deposited thereon.

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Dishwashing Comp.

(From Page 41)

clean, dry test tubes. Add five drops (0.10 ± 0.02 ml.) of standard soap solution, conforming to American Public Health Association standards, to each test tube and swirl them gently for 30 seconds. If the hardness being tested is over 10 grains per gallon use 10 drops of standard soap solution. Immerse the test tubes for exactly five minutes in a distilled water bath maintained at 75° - 80° C. Remove the test tubes from the water bath and, without agitation, examine them for turbidity within five seconds after removal from the bath. The absence of turbidity in the test solution containing the hardness, when compared with the blank, indicates that the water has been softened completely.

Test Data

DATA are presented in Table I showing the minimum concentration, as ounces per 10 gallons of solution, required by several dishwashing compounds to soften water of varying hardness by both the soap lather test and the new turbidity method. In general, the concentrations required by either test are of the same order of magnitude. Similar determinations of the water-softening capacity of various sequestering agents were also made by the new method. The data are shown in Table II. The order of increasing sequestering action is as follows: tetrasodium pyrophosphate, sodium tripolyphosphate, sodium tetraphosphate, tetrasodium salt of ethylene diamine tetra acetic acid, and sodium hexametaphosphate, the last two being approximately equal. The turbidity method data of Tables I and II are plotted in Figures 1 and 2, respectively.

The reproducibility of the turbidity test as well as the effect of using two different standard soap solutions was determined. The data of Table III indicate that the method is reproducible and that different soap solutions conforming to A.P.H.A. standards will give the same results.

Discussion

THE curves of Figures 1 and 2 are worthy of note. In Figure 1, the curves bend slightly toward the abscissa indicating that at the higher hardness levels the minimum amounts required for water softening are somewhat less than proportionate to the amounts required at lower hardness. The cause of this effect is not known definitely but may possibly be due to the solubilizing effect of the high concentration of sodium salts on the precipitated hard water soap.

In Figure 2, Agent 5, tetrasodium salt of ethylene diamine tetra acetic acid, is the only one which exhibits a straight line relationship between water softening concentration and water hardness. This is in agreement with the postulated structure of calcium and magnesium chelate complexes in which one mole of metal ion is tied up by a mole of agent (6). It is uncertain why the phosphate sequestering agents do not show a similar linear relation. It is known, however, that the glassy phosphates are not single chemical individuals and that the weight of calcium sequestered per gram of any of the complex phosphates

is much less than that predicted by any assumed calcium-phosphate complex (7, 8). It is likely, therefore, that the sequestering ability of a complex phosphate depends on the nature and concentration of its dissociated ions in solution which in turn depend on the concentration of dissolved material. This, coupled with the fact that the glassy phosphates are not simple chemicals, may serve as a possible explanation for the non-linearity of the curves for phosphates in Figure 2.

With respect to the turbidity method described above, it is important that the determination of the presence or absence of turbidity in the solution be made within five seconds after the test tubes are withdrawn from the water bath. This is necessary because, on cooling, the solution may develop turbidity where none existed at the higher temperature. With a little experience in performing the test, no difficulty is encountered in obtaining a sharp endpoint.

Summary

A METHOD for water softening capacity, applicable to dishwashing compounds and sequestering agents, has been developed which is rapid and reproducible. The method is based on the detection of turbidity produced by the addition of soap to a solution of compound in hard water. The absence of turbidity indicates complete softening of the water. Several dishwashing compounds and sequestering agents were tested for minimum concentration required to soften water of varying hardness. The increasing order of effectiveness for the sequestering agents is: tetrasodium pyrophosphate, sodium tripolyphosphate, sodium tetraphosphate, sodium tetraphosphate, tetrasodium salt of ethylene diamine tetra acetic acid and sodium hexametaphosphate.

Because of its reproducibility and ease of performance, the turbidity method is being considered for inclusion in a proposed Federal specification for dishwashing compound, which ultimately will be used by all Government agencies in the procurement of this material.

Acknowledgment: The authors
(Turn to Page 153)

TABLE III
Results Obtained by the Turbidity Method Using Different Standard Soap Solutions*

Water Hardness (grains/gal.)	Concentration (oz./10 gal.)	Standard Soap	
		A	B
Dishwashing Compound A			
10	4.0	+	+
10	4.1	+	+
10	4.2	—	—
10	4.3	—	—
20	7.0	+	+
20	7.1	+	+
20	7.2	—	—
20	7.5	—	—
Sodium Tripolyphosphate			
3	0.3	+	+
3	0.4	—	—
3	0.5	—	—
7	0.7	+	+
7	0.9	+	+
7	1.0	—	—
7	1.1	—	—
10	1.5	+	+
10	1.6	+	+
10	1.7	—	—
20	4.0	+	+
20	4.5	+	+
20	4.8	+	+
20	5.0	—	—

+ indicates turbidity and incomplete water softening.

— indicates no turbidity and complete water softening.

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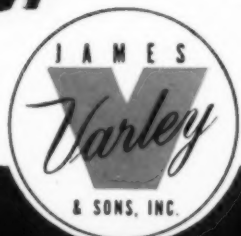
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The Anchor Molded Cap is distinguished by a patented liner retaining ledge and recess. This feature holds the liner permanently captive without the necessity for adhesives which frequently crystallize, release the liner and contaminate contents. It permits the use of full-size liners that completely cover the glass sealing surface. It prevents buckling, wrinkling or creeping of liners —permits their free rotation, thus preventing liner damage in application. And withal, Anchor Molded Caps are impervious to the action of most acids, alkalis, oils, alcohol and other destructive agents. They are available in 7 sizes from 18 to 33 mm. Let us tell you more about the advantages and economies of Anchorglass Containers and Anchor Molded Caps.

*Reg. U. S. Pat. Off.

For the **BEST** in Glass Packaging *it's*

ANCHOR HOCKING



"THE MOST FAMOUS NAME IN GLASS!"

September, 1950

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perfuming of any product . . . Oils and chemicals will produce an odor . . .
but a skilled perfume chemist will create a thing of beauty, artfully
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design a *selling* scent.

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LIQUID WAX

**Dries
to a Lustre**

**A THIN COAT DRIES TO A HARD-WEARING,
LONG-LASTING, BEAUTIFUL LUSTRE**

**Building
Managers
use "BEAMAX," the
superior liquid wax
for economical,
protective
floor care**

For heavy traffic on your floors, use "BEAMAX."

This true Carnauba water emulsion wax adheres to the surface and develops a high lustrous protective film when it dries.

"BEAMAX" is easily applied to all floor surfaces where use of wax is practical. It dries to a lustre in about 20 minutes. It is water resistant when dry and will not solidify in storage. *It is approved by Rubber Floor Manufacturers' Association and Underwriters' Laboratories.* Floors treated with "BEAMAX" can be kept in excellent condition by dry or wet mopping. Send for free sample of "BEAMAX."

THE DAVIES-YOUNG SOAP COMPANY • Box 995 • DAYTON 1, OHIO

Please send FREE Sample of "BEAMAX".

SSC-950

NAME ADDRESS
CITY STATE

September, 1950

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HOW TO SELECT AN AEROSOL CONTAINER



1 IF YOU'VE GOT YOUR OWN VALVE, Continental's dome top pressure can is the container for you. It's streamlined, has a quality appearance, is versatile — ideal for packaging a wide range of products, from insecticides to paint. And the lithography is as striking as its silhouette.



2 IF YOU WANT A "CONTAINER-AND-VALVE," all in one, it's Continental's exclusive "finger-tip" dispenser you're looking for. It's the only container with a built-in valve, and it can't be beat when it comes to low-pressure dispensing of fine spray products like insecticides, larvicides, household deodorants, and similar preparations.

THERE'S a good "reason why" for each of the two low-pressure aerosol dispensers shown above. Selection of the *right* container — in terms of your product, packaging, distribution and merchandising problems — is important to you. That's why we'll be glad to give you the benefit of our experience, and do everything we can to help you make the right decision.

Continental is not only the largest manufacturer of low-pressure aerosol cans for non-food products, but also the only source equipped to supply you with both container and valve — or container alone. Both cans can be lithographed in bright, attractive colors.

For the solution to your aerosol packaging problem, why not check with Continental?

CONTINENTAL © CAN COMPANY

122 EAST 42nd STREET, NEW YORK 17, N. Y. • 135 SO. LaSALLE STREET, CHICAGO 3, ILL. • RUSS BUILDING, SAN FRANCISCO 4, CAL.



DETHMOR treatment is a continuous control procedure quite different from methods heretofore standard or customary.

DETHMOR feeds rats and mice minute doses of an anti-blood coagulating chemical over a five, ten or fifteen day period — doses so small that hazards to humans or household pets are almost negligible. Of course, since it is a rodenticide, care is necessary when using, and our label gives valid cautions.

DETHMOR baits are acceptable to rats and mice from start to finish; no bait shyness develops!

DETHMOR is formulated from warfarin under precise laboratory control. Mix 19 parts bait with 1 part Dethmor, and 85% to 90% control may be expected.

S. B. PENICK

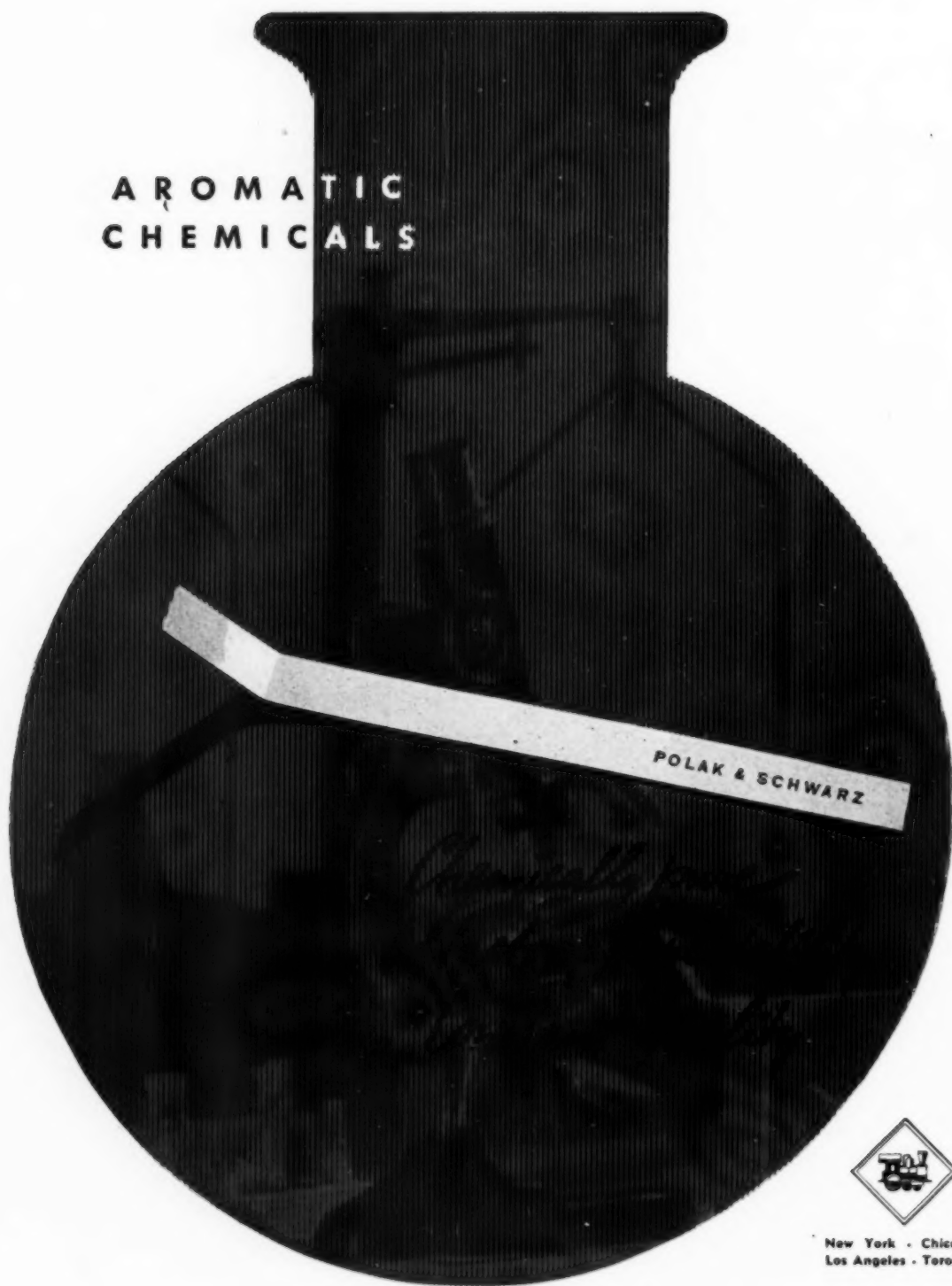
50 CHURCH STREET, NEW YORK 7, N. Y.
Telephone, COrtlandt 7-1970



& COMPANY

735 WEST DIVISION STREET, CHICAGO 10, ILL.
Telephone, MOHawk 5651

AROMATIC
CHEMICALS



New York - Chicago
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If you want to build up profits—new products and improved products are a must. Let's get down to business. The chemicals listed here may fit into your product development and improvement program. Call CARBIDE for more information and further suggestions.

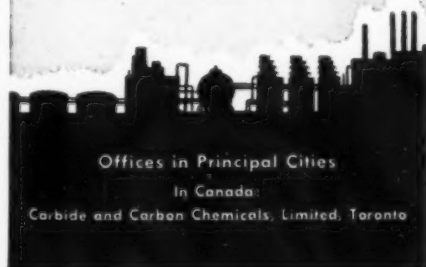
These CARBIDE Chemicals are used in the following products

Isopropanol	--- germicides; rubbing compounds; liquid soaps; lotions; liniments.
CARBOWAX Compounds	--- ointment bases; cosmetic creams; paste polishes; hairdressing specialties.
Phenyl CELLOSOLVE	--- fixative for perfumes and soaps; hair lotions.
Ethanol	--- disinfectants; cosmetics; toiletries; cleansers; polishes.
Mixed Isopropanolamine	--- dry-cleaning soaps; solvent activator for paint-stripping compounds; emulsifier for water emulsion paints.
Triethanolamine	--- shampoos; emulsifier for wax polishes; cosmetics.
Morpholine	--- rubless floor-polishes; volatile corrosion inhibitor.
TERGITOL Dispersant TMN-650	--- additive for soap products to give hard water resistance; emulsifier for insecticides.
TERGITOL Wetting Agents 7 and P-28	--- spreading agents for window and household cleaners; anti-static preparations; bactericides.
CELLOSIZO Hydroxyethyl Cellulose	--- thickener and stabilizer for shampoos, hair-waving preparations, creams, and lotions.

CARBIDE AND CARBON CHEMICALS DIVISION

Union Carbide and Carbon Corporation

30 East 42nd Street **UCC** New York 17, N. Y.



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A booklet, "Physical Properties of Synthetic Organic Chemicals," contains detailed information on more than 200 CARBIDE products. If your product is based on an emulsion you'll be interested in the new edition of the 72-page booklet "Emulsions and Detergents."

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- ☐ Physical Properties of Synthetic Organic Chemicals
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Company _____

Address _____

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It takes more than a package, a propellant and an insecticide to put your aerosol product across.

IT MUST ALSO SMELL GOOD!

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KEREX

RE-ODORANTS

First choice for pleasantly perfuming bulk and hand spray insecticides at a cost of...

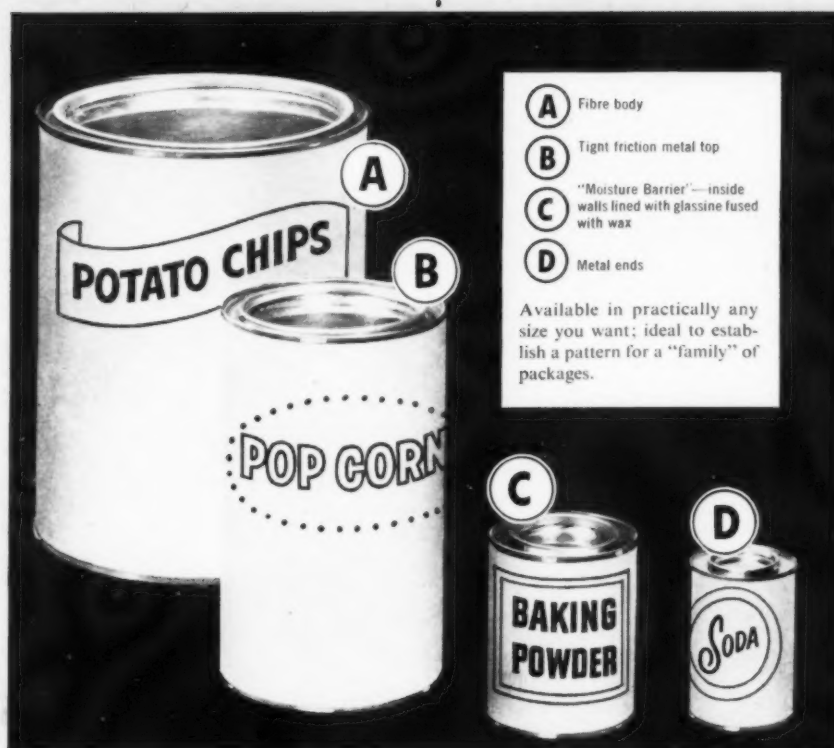
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**WHICH PACKAGE
SUITS YOUR PRODUCT?**



WANTED: New customers for a top-notch salesman!

The inside walls of this container are lined with glassine fused with wax to provide a barrier that keeps inside moisture in . . . and outside moisture out.

Primarily, it is an excellent package for *any* dry, powdered product or one needing protection against moisture.

You'll run out of fingers!

Start ticking off some of the products for which this container is suitable and watch how the list mounts.

In the food field there's baking powder, crackers, popcorn, potato chips, powdered milks, gelatines, and a variety of cake and biscuit mixes.

In the drug field you can make quite a list, too. It's ideal for bath salts, epsom salts, bicarbonate of soda, insecticides, boric acid, senna leaves, sulphur powder, sodium fluoride, flaxseed and Glauber's salt. In other words, it's a possibility for quite a few dry pharmaceutical products and proprietary remedies.

The container fills fast and ships light. It comes in a wide variety of sizes. It is easy to stack and easy to handle.

Can't miss the label!

There's plenty of "front" for your label and it has a tight friction metal top (easy to open—closes snug) with a wide aperture for free pouring or dispensing.

Is your product a new customer for this salesman?



The Master's Touch



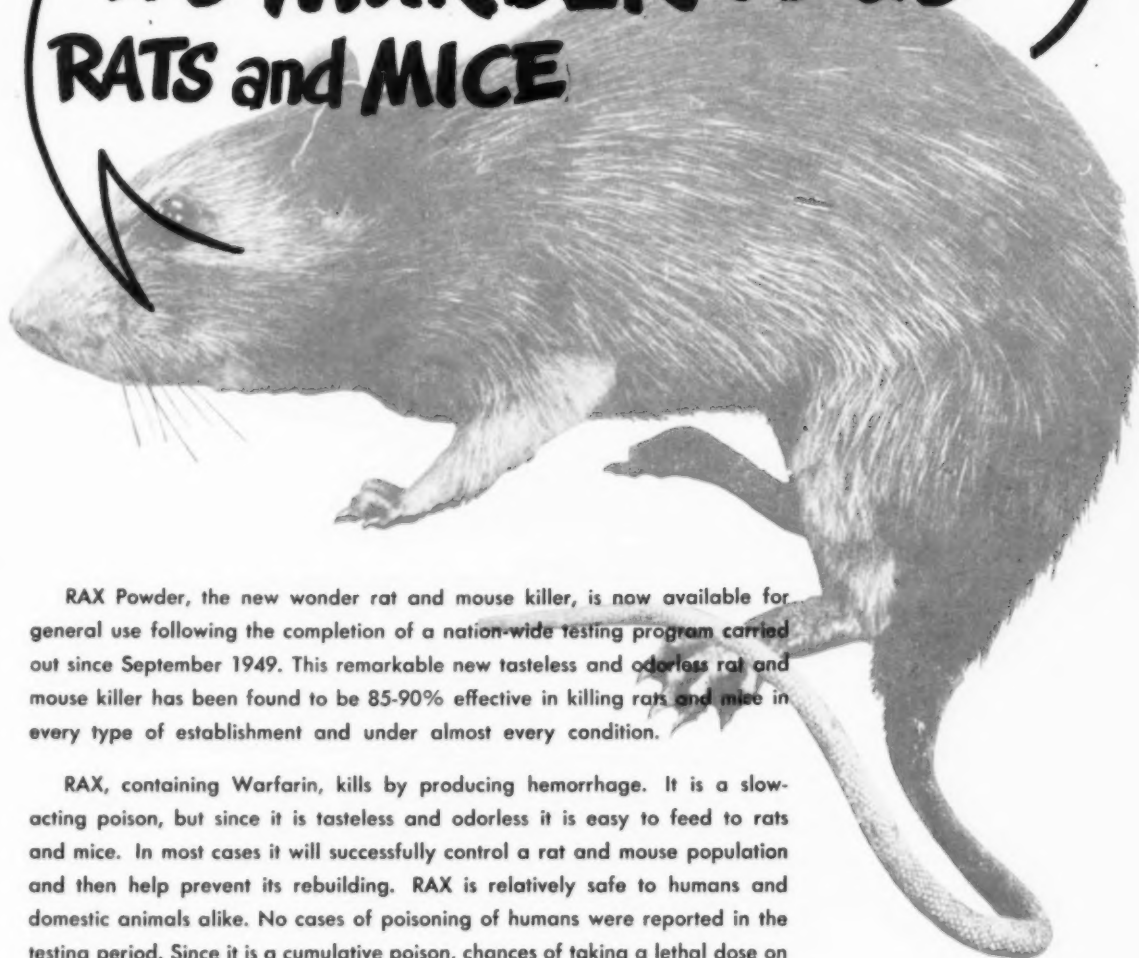
*Essential Oils
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*T*he Maestro knows the score. Skilled Perfumers do too! It takes creative know-how and long experience to produce correctly blended ingredients that will give your product a personality all its own and increase its sales potential. We have the experience, the facilities, and the master's touch to help you improve a product or create a new one. We welcome the opportunity to serve you.

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IT'S **MURDER** TO US
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RAX Powder, the new wonder rat and mouse killer, is now available for general use following the completion of a nation-wide testing program carried out since September 1949. This remarkable new tasteless and odorless rat and mouse killer has been found to be 85-90% effective in killing rats and mice in every type of establishment and under almost every condition.

RAX, containing Warfarin, kills by producing hemorrhage. It is a slow-acting poison, but since it is tasteless and odorless it is easy to feed to rats and mice. In most cases it will successfully control a rat and mouse population and then help prevent its rebuilding. RAX is relatively safe to humans and domestic animals alike. No cases of poisoning of humans were reported in the testing period. Since it is a cumulative poison, chances of taking a lethal dose on the part of humans or pets are minor.

Prentiss now makes RAX POWDER available for professional use, for packaging under private label or for manufacture into prepared baits that have long shelf life.

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I'm interested in RAX for

- ☐ professional use
- ☐ repackaging under private label
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Now Available . . .

"SOAPS and DETERGENTS"

by E. G. Thomssen and J. W. McCutcheon

CONTENTS

Chapter 1—RAW MATERIALS—Fats, oils, fatty acids, alkalis, builders, etc. Methods and processes involved in fat and oil processing, refining, bleaching, etc.; fat splitting, saponification, hydrogenation, etc.

Chapter 2—MACHINERY AND EQUIPMENT—Types and uses of soap plant equipment. Selection of equipment as to material of construction, safety, capacity and efficiency.

Chapter 3—SOAP MAKING METHODS—Practical description of soap making processes, full boiled, semi-boiled cold process, potash soaps, spray processes, etc.

Chapter 4—SOAP PRODUCTS—Every known type of soap is described, considering raw materials, manufacture, characteristics, uses, etc.

Chapter 5—PERFUMING & COLORING SOAP—Action of soap or alkali, light and air on some of the common aromatics. Classification of perfumes.

Chapter 6—GLYCERINE RECOVERY AND REFINING—Recovery methods for glycerine. Continuous glycerine distillation. Fat splitting methods, fatty acids distillation and refining, and allied processes.

Chapter 7—SYNTHETIC DETERGENTS—Alcohol sulfates, alkyl aryl sulfates, alkyl sulfonates, sulfated sulfonated amides, esters, and amines. Evaluation and classification of the detergents.

Chapter 8—ANALYTICAL METHODS—Sampling and chemical analysis for control during manufacture; analysis of finished products.

APPENDIX

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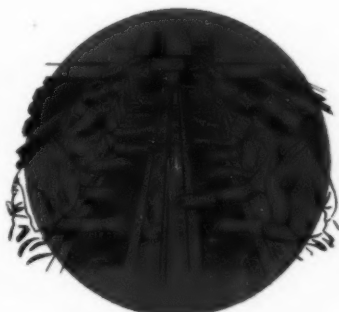
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fast knockdown
and kill

WAREHOUSE



Pyrenone-based
insecticides
control—

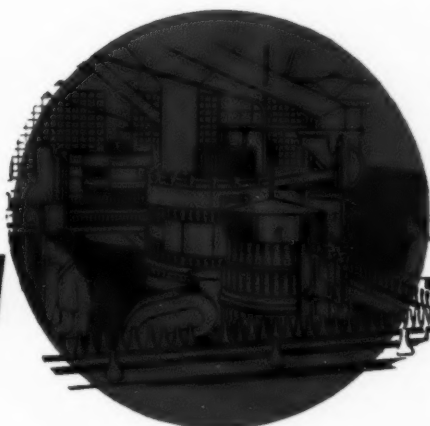
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in pest control
around
foodstuffs



BOTTLING PLANT

Now you can formulate area-type sprays that are fast-acting and highly effective against a wide range of food insects—yet *free from toxic hazards*, skin irritants, and objectionable odors. **Pyrenones* will give your area-type spray this unique combination of properties—a combination that means better, faster, more convenient pest control for your customers—and more sales for you.

And Pyrenones can give your residual-type sprays a combination of effectiveness, staying power, and *safety*—so important in the food field—that no other insecticide ingredient we've tested can approach.

Write today for complete technical information about the use of Pyrenones in insecticides for pest control around foodstuffs.



*Pyrenone is a registered trademark of U. S. I. It designates combinations of pyrethrins and piperonyl butoxide.

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September, 1950

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SWIFT'S SOAP TEAM!

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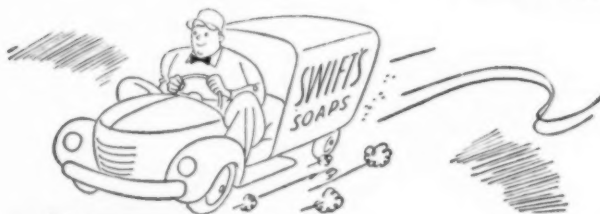
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We're READY with pure soap in bulk for all your needs! Swift offers a full line of basic soap materials. Whether you make hand soap, furniture cleaners, rug shampoos, washing machine soaps or any other soap product—you'll find a Swift Soap that fits *your* need. And you can't buy finer soaps for converter uses anywhere.

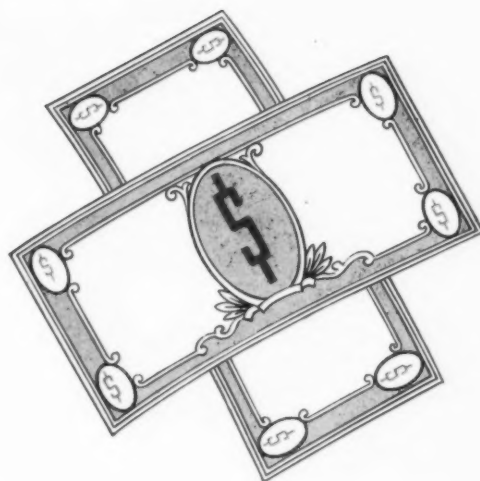


WILLING to continue Swift's research laboratory activities to develop better products for your purpose! Our technical division is constantly working on soap and sanitary chemical problems. This means that Swift Soap products always have the quality and effectiveness to help you get better results.



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Here are three Monsanto chemicals that offer possibilities as products for your line. In either case, there's profit potential. Why not investigate and see what these products can do for you?

SANTOCHLOR (Monsanto's para-dichlorobenzene), widely used as a deodorant, mothicide and larvacide, has also been proved effective in preventing mildew.

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For further information, mail the coupon or contact the nearest Monsanto Sales Office. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1767-J South Second Street, St. Louis 4, Missouri.

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TRICHLOROBENZENE, Technical
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LEADING manufacturers in the fields of floor waxes and other floor finishes, disinfectants, sanitizers, soap and detergent specialties, household insecticides and moth products, aerosol specialties of all types, and allied chemical specialties are members of CSMA.

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Crown Wax Number	Melting Point °F	Penetration 100 g., 5 sec.	Color N.P.A.	Acid Number	Saponification Number
23	180/185	6 max.	6 max.	20-25	55-65
36	180/185	8 max.	8 max.	30-35	85-95
1035	195/200	2 max.	2½ max	Nil	Nil

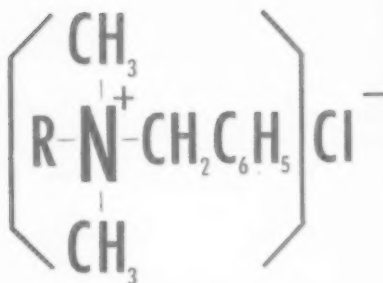
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DISINFECTANT
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Sold as a 50% concentrate in aqueous solution.

Also available to meet U.S.P. requirements as BTC Brand of Benzalkonium Chloride, U.S.P.

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Remember...

- 1 The original industrial quaternary, alkyl dimethyl benzyl ammonium chloride, has been most thoroughly investigated and documented. It is the standard accepted quaternary for cationic germicidal uses, with proved performance in all sanitization and deodorization applications.
- 2 When you specify Onyx BTC* you can count on the results you will get, and you will have no worries about toxicity and skin sensitivity. Complete and authoritative studies have been made and widely published establishing germicidal activities, deodorizing properties, and proving that BTC* is non-toxic and non-sensitizing at all use-dilutions.
- 3 The complete stability of benzalkonium chloride (alkyl dimethyl benzyl ammonium chloride) is an established fact. When you specify Onyx BTC* you need never concern yourself about shelf life. BTC* is a specific chemical which does not deteriorate.
- 4 Onyx BTC* is made under rigid technical controls which insure the maintenance of its mixture of alkyl radicals at optimum bactericidal activity.
- 5 Onyx is the leading producer of quaternary ammonium compounds in the United States. BTC* is one of many Onyx quaternaries. Others are: lauryl isoquinolinium bromide, dialkyl dimethyl ammonium bromide, cetyl dimethyl benzyl ammonium chloride, alkenyl dimethyl ethyl ammonium bromide and alkyl dimethyl 3:4 dichloro benzyl ammonium chloride.



*Trade Mark Reg. U.S. Pat. Off.

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Allethrin* MGK

FOR EXPERIMENTAL USE IN...

AEROSOL INSECTICIDE CONCENTRATES

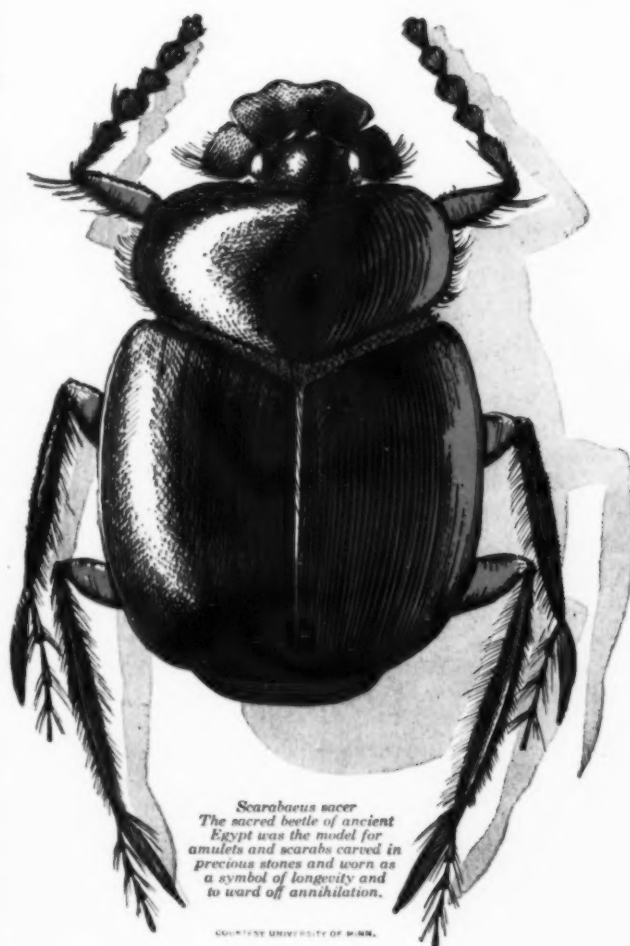
SPRAY INSECTICIDE CONCENTRATES

DUST INSECTICIDE CONCENTRATES

* Allethrin is the allyl homolog of Cinerin I, the so-called "synthetic pyrethrum".



MGK
Allethrin



Scarabaeus sacer
The sacred beetle of ancient Egypt was the model for amulets and scarabs carved in precious stones and worn as a symbol of longevity and to ward off annihilation.

COURTESY UNIVERSITY OF MINN.

MGK allethrin, the long awaited synthetic substitute for pyrethrum, is now available.

To achieve consumer acceptance, MGK recommends that allethrin be introduced in combination with natural pyrethrins. Extensive tests indicate that allethrin is equal to pyrethrins in fly killing power and is superior in color, purity and stability. However, conservatism suggests that for the present allethrin can best be used with pyrethrins. Such combinations have proved to be equal to or better than pyrethrins alone, when properly formulated, and will relieve the current short supply of pyrethrum.

Certain synergists have shown unusual effectiveness when used with allethrin. The synergist MGK "264", used with allethrin, makes a satisfactory insecticide for roaches as well as flies and mosquitoes.

Specifically, we recommend you use MGK allethrin, "Pyrocide" 175 and MGK 264 in 1951 insecticide formulations. This will effect substantial savings while maintaining or increasing the quality of your products.

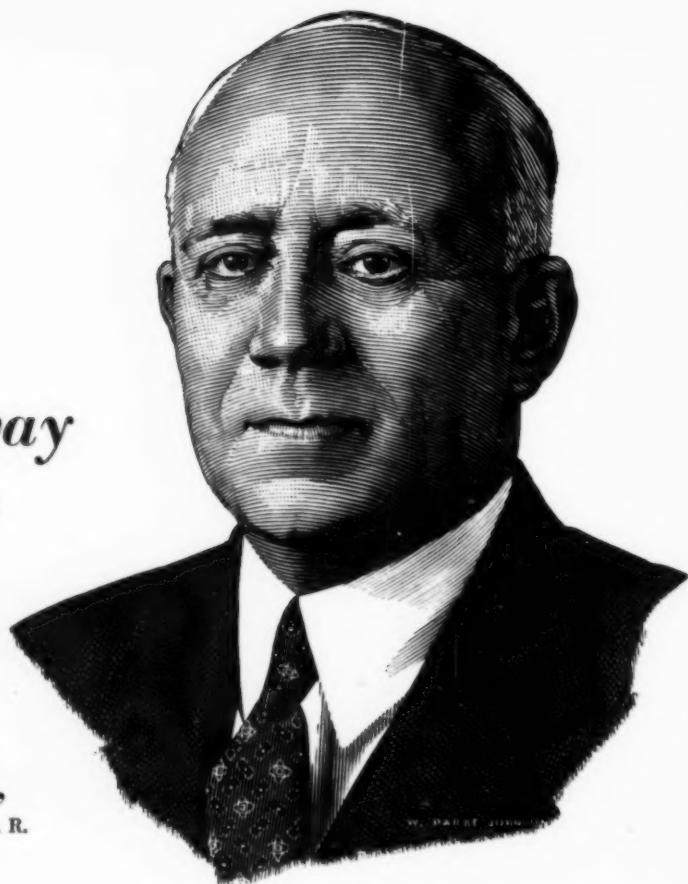
MGK allethrin is now available in good supply. As always, your assurance of quality and value is the MGK emblem. For more complete information on MGK allethrin or MGK's many other products and services, write 1713 Southeast Fifth Street, Minneapolis, Minn.

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Chairman of the Board, Pennsylvania R. R.

"The easiest way to buy bonds is through the payroll savings plan. We on the Pennsylvania believe in that plan. Labor and management, officers and employees, over half of us are enjoying it. We believe that it is good for our country, that it is good for our company, and that it is good for ourselves and our families to have these savings."

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For the employee, the Payroll Savings Plan is a positive boon. It is the easy, automatic way for him to build finan-

cial independence, provide for the education of children or save money for a home.

If your company does not have a Payroll Savings Plan, here are two things you can do *today*:

Appoint a Bond Officer, one of your major executives—the kind of man who picks up a ball and runs with it. Tell him to get in touch with the State Director, Savings Bond Division, U. S. Treasury Department. The State Director is ready with a package plan—application cards, promotional material, practical suggestions, and all the personal assistance your Bond Officer may need.

Then make a note on your calendar to check the status of your Payroll Savings Plan six months from today—and you will be surprised and gratified at the high percentage of employee participation you will find.

The U. S. Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the G. M. Basford Company and

SOAP and SANITARY CHEMICALS



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Spray away sales troubles
with **DU PONT PERFUME OILS**

depend on Du Pont

Odor appeal helps product appeal! Creative skill . . . technical knowledge . . . Du Pont perfumers and chemists use both in formulating a series of tested, dependable perfume oils for all kinds of aerosol products. Here are some popular types:

FOR INSECTICIDES, it is necessary to mask the odor of the insecticide, as well as the solvent (concentration: about 1%).

"Alamask" ND	(bouquet)	\$2.65 per lb.*
"Alamask" 6344/2	(cologne)	2.65 " " "

FOR HOUSEHOLD DEODORANTS, fresh, light odors are most refreshing (concentrations: 0.1 to 0.5%).

"Alamask" 6165/1	(pine)	\$2.90 per lb.*
"Alamask" 6394/1	(fresh)	4.50 " " "

FOR COSMETIC PRODUCTS, add new sales appeal with our individualized recommendation.

*Prices subject to change without notice.

New booklet, "Du Pont Perfume Oils for Aerosols." Send today! Whatever the product . . . whatever the odor . . . Du Pont can satisfy your requirements. Write E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Aromatics Section, Wilmington 98, Delaware. Branch offices: Atlanta, Boston, Charlotte, Chicago, New York, Philadelphia, Providence, San Francisco.

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SANITARY PRODUCTS

A SECTION OF SOAP

WIDESPREAD cool weather during most of August brought a sharp drop in the retail sale of most household insecticide products, according to reports in the trade. This sales decline followed two months of active consumer buying which at one time threatened to deplete stocks in some sections. Also, a change in the character of household insecticide demand, a trend toward space sprays and aerosols in place of residual type products, has been reported.

The belief had been general that because of the heavy demand for pyrethrum and allethrin for use in space sprays and aerosols that stocks would be inadequate to carry through the 1950 season. The decline in demand, however, has eased the raw material situation to the point where it is believed that there may be a small carry-over of pyrethrum into 1951. With an expected pyrethrum output of five thousand tons for 1950-51 in British East Africa and in the Congo, the largest production since 1945, and with Japan again coming into the picture with larger plantings, a better supply of pyrethrum derivatives for the 1951 season is anticipated, even though the price of flowers will remain high, 37 cents.

If the U. S. military forces enter the picture in the near future, the possibilities of little or no pyrethrum for civilian use in 1951 are not remote. But, if the bulk of 1950-51 production is available for general use, the feeling is about that demand will take up the larger output and in all probability exceed it. By the year end, a revival of chemical adjuncts for use alone or with pyrethrum in space sprays may be noted. The high price of pyrethrum flowers which will continue at least for another three years could add impetus to such a revival, especially if the over-all anticipated broadening of demand for space sprays

and aerosols in 1951 develops. At any rate, not too much in the way of insecticide raw materials is likely to go begging over the next six months.

* * * * *

READ the label! The National Agricultural Chemicals Association has been undertaking a drive to induce the consumers of its members' products to do just this. Realizing that misuse of a product is the greatest enemy of the product and its manufacturer, NAC is out to reduce the percentage of misuse through the direct expedient of wider label reading by users. Obviously, they have a tough job on their hands, although we question that it is nearly as tough as that faced by the average manufacturer of polishes, floor waxes, cleaners, disinfectants, household insect products, and other specialties bought and used by the housewife. Nevertheless, we feel that this type of educational publicity is sorely needed and could well be extended to household chemical specialties.

Admittedly, no way has yet been unearthed to make a housewife read label directions. To a great extent, this is a shortcoming of most housewives, but not wholly their fault. Many labels discourage reading; others make it well nigh impossible without a magnifying glass or the eyesight of a hawk. Manufacturers whose labels are difficult to read are direct contributors to the potential misuse of their products and any resultant lawsuits or other headaches.

Why urge a user to read that which he cannot see nor decipher? Instead, why not first make it easy to read and understand, and then go out to make him read? This is a matter which we earnestly believe should come in for wider attention among manufacturers of all sorts of household cleaners, polishes, disinfectants and other specialties. The whole subject is worth some study right now.

The "Average" Sanitary Supply

THE average sanitary supply house does an annual business of approximately \$188,000. Average inventory is \$23,800, which in turn indicates that stock is turned over approximately eight times a year. This same imaginary average sanitary supply firm handles 526 items, employs eight salesmen who work on a commission which averages 18 per cent. The firm manufactures some of the products it sells, buying others, perhaps a major share, from 55 sources of supply. It operates no laboratory. Customers are allowed a cash discount of 1 per cent. Credit loss is not a major problem, the average loss being only slightly above one-half of 1 per cent. The firm's line of products includes equipment as well as supplies. It operates in an area of 234 miles surrounding its place of business. Its principal interest is in private label business rather than the

sale of products under the manufacturer's brand, with 82 per cent of its sales volume consisting of products sold under its own brand and label.

The above composite figures are taken from a survey just completed by *Soap and Sanitary Chemicals* in which questionnaires were sent to five hundred representative firms in the industry, of which 278 were filled out and returned, giving figures from which the above hypothetical average company in the business has been modeled. Perhaps to be somewhat more accurate, it should be acknowledged that the cross section of the industry covered may not be completely representative. The concerns which received the questionnaire were necessarily the better known firms in the industry, with names taken chiefly from the membership rolls of the National Sanitary Supply Association. Those surveyed and perhaps those who filled out and returned questionnaires

may well have been more heavily weighted on the side of the larger and more efficiently run firms in the industry. Instead of considering the above and the subsequent figures then as representative of the general average of the industry, it might be more accurate to think of them as the averages for the top half of the industry.

Taking up in detail the answers to some of the specific questions, it was particularly interesting to learn that approximately 67 per cent of the firms supplying sanitary supplies to the consuming trade, including hotels, office buildings, institutions, etc., manufacture some items which they sell. Of those who replied, 9 per cent reported that they manufacture a major part of the total products they sell. An additional 58 per cent reported that they manufacture some items. The remaining 33 per cent stated that they are exclusively jobbers and dealers.

Those firms which buy from



House . . .

It does \$188,000 and turns its stock eight times a year, stocks 526 items, operates in an area of 234 miles, manufactures some of the products it sells and markets 82% of items under its own brand, a recent cross-section survey shows.

others for resale of all or at least part of the items which they supply seldom depend on a single, or for that matter, a few suppliers. Only 26 per cent of those firms who participated in our survey reported that they customarily depend on only "a few" sources of supply. The balance reported that they deal more widely, their replies showing that over the course of a year they may deal with from fifteen to as many as 200 different manufacturers.

The vast majority (89 per cent) of these firms supply a general and fairly complete line, rather than specializing in a few items. The number of products they reported stocking ranges from 15 to as high as 2,000, with the average reported above being 526. Of the specialists, some concentrate largely on floor maintenance products, while others emphasize sale of paper, towels, cups, etc. A number of firms, of course, indi-

cate that they specialize in the sale of products of their own manufacture, while stocking and supplying others only to complete their lines.

Few firms in the janitor supply field maintain their own testing facilities. Only 18 per cent reported that they do any of their own testing. An additional 40 per cent indicated that they occasionally employ the facilities of consulting chemists, while 42 per cent apparently neither test on their own nor do they have test work done for them.

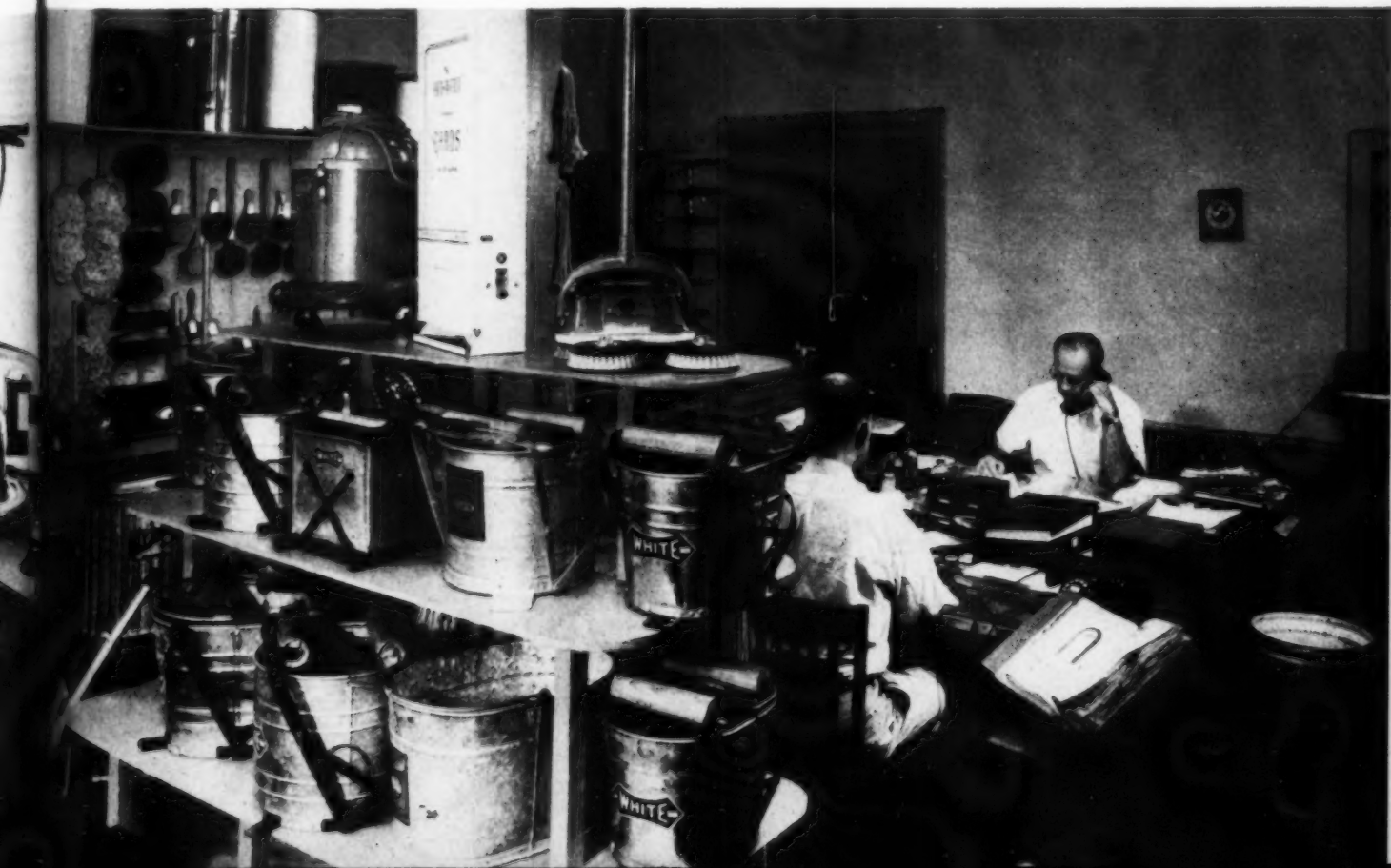
Several of the firms participating in the survey reported annual sales in excess of a million dollars. Their totals have been omitted in compiling the average sales figure here, since they

obviously are not representative. The sales range of the other reporters ran from \$25,000 a year to \$670,000. Average sales volume was \$188,000. If the million-dollar operators are included, the average becomes approximately \$250,000.

Inventories carried ranged from \$3,000 to a high of \$75,000, again excluding the apparently non-representative firms whose sales range upwards of a million a year and whose inventories are also unusually high. The average inventory figure for the group of firms which are taken as more closely representative of the general level of the industry is \$23,800.

The variation noted in some of the reported rates of stock turnover seemed rather unusual. One firm, which claims the most rapid turnover of any of the reporters, advised that they maintain an inventory of only \$4,000, while doing an annual sales

Some indication of the number of items carried by a sanitary supply firm is given in the two views below of the show room of Daycon Products Company in Washington, D. C.



volume of \$180,000, a turnover of 45 times a year. Other firms whose reported turnover was far above normal included one doing \$500,000 a year and stocking \$25,000, and two others reporting sales and stock figures, respectively, \$175,000 and \$15,000 for one and \$60,000 and \$3,000 for the other. At the other end of the line was a concern that reported it kept an inventory of \$10,000 while doing an annual sales volume of only \$25,000. Another report gave figures of \$110,000 for sales volume in comparison with stock of \$40,000. Still another in the slow turnover group keeps an average inventory of \$60,000 while doing an annual volume of \$250,000.

All Firms Use Salesmen

THE industry is apparently almost 100 per cent in its use of salesmen. All firms in the industry employ some salesmen, with no reporting firm depending exclusively on direct mail and advertising to secure business. About 15 per cent of the reporting firms indicated that they supplement the work of their sales staffs by mail solicitation, while a like number use newspaper or other published advertising.

The number of salesmen employed ranges with the different concerns reporting from one to 35, with an average of 8. Only 4 per cent of the industry compensates its sales personnel exclusively on a salary basis. Those who operate exclusively on a commission basis number 71 per cent of the industry, while the balance (25 per cent) work on a salary or drawing account plus commission basis. Rates of commission paid to salesmen range all over the lot, from 1 per cent to 50 per cent, varying with types of products and equipment sold. On the basis of figures reported in this survey, it has been rather difficult to arrive at an average commission rate for the industry which we can be sure is completely accurate, since some firms in reporting did not give the rate of commission paid in relation to total sales price, but reported rather that they paid their salesmen some fixed percentage of

profit. For these firms we have had to estimate profit rates to reduce the commission figure to a percentage based on sales. Probably the average

sales commission paid in the janitor supply trade is in the neighborhood of 15 to 20 per cent.

Apparently, a fairly common

SANITARY SUPPLY SURVEY

1. Do you manufacture any of the products you sell, or are your activities confined exclusively to reselling products purchased from outside sources?
 - ☐ We manufacture a major part of the total we sell
 - ☒ We manufacture some items
 - ☐ We are exclusively dealers and jobbers

On the items that we buy from others for resale

We depend principally on ☐ one or ☐ a few houses as our sources of supply.

Our purchases are made more widely. We may deal in a year with as many as 55 manufacturers.
2. Do you sell a general line of sanitary and janitor supply products or specialize in sale of a few items?

Sell a general line. Our complete line numbers approximately 526 items.

Specialize in sale of _____ products.
3. Do you have facilities for testing the products you buy? NO
 - ☐ Operate our own laboratory
 - ☐ Have analyses made by consulting chemists
4. What was your approximate sales volume last year? \$188,000
5. What is your normal inventory? \$23,800
6. How do you sell?

By mail solicitation _____

Newspaper and other published advertising _____

Solicitation by salesmen ☒
7. How many salesmen do you employ? 8

Do they work on salary _____ or commission ☒.

If on commission, what is the average rate you pay 18%.

Lowest commission 5% Highest commission 30%.
8. Do you allow a cash discount to your customers? YES

What rate? 1%
9. What is your percentage of credit losses? 1/2 of 1%
10. In how large an area do you operate?
 - ☐ Only locally, or
 - ☐ In an area surrounding your home city of 234 miles.
11. Do you handle various items of equipment, such as floor machines, mopping tanks and trucks, sprayers, etc., as well as supplies?
 - ☒ Handle equipment.
 - ☐ Supplies only.
12. Do you concentrate on your own private label line, or sell under the manufacturer's brand?
 - ☐ Principally private label (82%)
 - ☐ Principally under manufacturer's brand (%)

Form used for Survey

basis for the payment of commission is forty or fifty percent of "profit" on such orders as the salesman brings in. Quite a substantial number of firms indicate that they operate on this basis, with various modifications. One firm, for instance, pays its salesmen 60 per cent of net profit, or 25 to 30 per cent of gross sales. Another reports that its policy is to split profit with the salesman after adding 10 per cent to cost if the profit is less than 20 per cent. Such a commission practice, of course, inevitably carries with it the incentive to encourage salesmen to sell at different rates to different buyers, perhaps charging what the traffic will bear in an effort to bring up the profit on the order and the commission at the same time.

Cash Discounts Vary

THE janitor supply trade shows no uniformity in its approach to the question of cash discounts. To begin with, allowing any cash discount is by no means a uniform practice. Of the firms reporting, some 18 per cent indicated that they do not allow any cash discount. Of the 82 per cent which do allow bills to be discounted, 55 per cent allow 1 per cent when bills are paid either within ten days of purchase or by the tenth of the succeeding month, while 25 per cent

allow 2 per cent. A few firms vary their rate of discount from 1 to 2 per cent on different types of orders. For instance, one firm allows 2 per cent on equipment, mops, brooms, etc., and only 1 per cent on soaps, cleaners, disinfectants, floor waxes, etc. Another firm, which operates both a retail and a wholesale business, allows 2 per cent on its retail sales and but 1 per cent on wholesale transactions. Only one firm reported any rate of discount other than 1 or 2 per cent. This company allows 3 per cent when deliveries are paid for on a C.O.D. basis.

Credit losses are evidently not a major problem anywhere in the sanitary supply industry. At least they have not been so in recent years, to judge from reports received in this survey. Many firms observed that credit losses are distinctly a minor item, and the highest reported loss was 3 per cent, with only half a dozen firms indicating losses as high as 2 per cent. The average for all firms reporting was just slightly above one-half of 1 per cent.

A few firms in the industry operate on a national basis. This is distinctly not general, however, and most firms report that they cover an area of from 20 to 500 miles surrounding their home base. The average firm

apparently covers an area of from 200 to 250 miles from its home office.

The sale of equipment lines in addition to sanitary supplies as such seems almost universal. Fewer than 5 per cent of the firms surveyed indicated that they do not stock equipment items.

The norm for the industry is to concentrate on private label lines, rather than to feature products under the manufacturer's label. Eighty per cent of the responding firms said that they do principally a private label business. Their average, incidentally, was 87 per cent of their sales volume, private label, and 13 per cent under manufacturer's brand. Six per cent of the industry reported their sales split about evenly between private label and manufacturer's brand sales. The balance, or 14 per cent of those firms surveyed, reported that the major part of their sales volume consists of sales of products under the manufacturer's brand name. The averages for these firms were 18 per cent of their sales, private label, and 82 per cent under manufacturers' brands. Over-all averages for all three groups indicate that the industry as a whole sells 82 per cent private label and 18 per cent under manufacturer's brand.

One participant in our survey added a few observations of his own on the subject of private label vs. manufacturers' brands which are worth repeating. He feels that everyone would be better off "if fewer private brands were handled and each manufacturer confined himself to one distributor in the larger cities, as is common practice in the office supply line." He feels that the quality of the products offered by the various private brand manufacturers, and their operating policies, would both be improved if their own names were at stake on the products they supply. Much private label merchandise, he maintains, is not up to the quality of the better-known national brands, though there are, of course, conspicuous exceptions to this rule. But profit margins must be maintained in this field, he warns, or a more economical method of distributing such merchandise eventually will be found.

Showroom of Janitors' Supply House, Baltimore, is typical of those found in smaller cities.



QUATERNARIES VS. HYPOCHLORITES

By Vladimir Dvorkovitz and C. K. Crocker*

Diversey Corp.

FOR MANY years chlorine and related products containing available chlorine have been the main disinfectants for food processing or dispensing industries. A considerable backlog of technical evidence is available regarding the efficiency of chlorine for this purpose. Procedures, operating conditions and methods of test have been proved, and as a result confirmatory inspection has been easy and precise.

There have been developments and improvements. For example, chlorine and its compounds can be unstable and corrosive. Those such as the calcium hypochlorites suffer in that their solutions leave insoluble calcium residues. The introduction of a specially chlorinated alkaline sodium phosphate, eliminated many of the complaints and disadvantages pertaining to chlorine disinfection. This product was stable, practically non-corrosive and completely soluble in water. These properties combined with high germicidal potency allowed this product to be superior in its field.

There remain, however, two properties that prevent such a product from being the completely ideal chemical disinfectant. First, its solutions have the characteristic chlorine odor which some people, especially those who frequent bars and saloons, find objectionable and second the rapidity with which chlorine attacks all organic matter. Because of this, surfaces should first be cleaned before disinfection, otherwise there would be the possibility of the chlorine being used up before all the bacteria had been killed. This type of chlorine disinfectant, with its high phosphate content, is in many respects a superior cleaner to the many cleaner-sanitizers based on quaternaries that are now of-

fered to the public but our experience has shown that to be on the safe side, the present practice of separating cleaning from disinfection is to be preferred.

We feel that such inherent properties of chlorine are minor in importance when compared with all the other beneficial and good properties. However, none of us working in the field of health and sanitation would be doing our duty if we ignored anything that superficially offered any improvements over existing products or methods of application.

The quaternary ammonium compounds as disinfectants were promoted in this country at a fast pace. Possibly the terrific tempo of the war and post-war years was responsible. In these years that saw sulfa drugs, DDT, penicillin and other wonder antibiotics follow each other, we were all conditioned to the idea that new products could rapidly be developed that would surpass older ideas and techniques.

On first examination, the quaternaries appeared to have a high degree of germicidal potency, were free from objectionable odor and had detergent properties. They seemed to

be ideal disinfectants and were so promoted.

Looking back, we see how some of the wonder drugs have been superseded and are now little used. We see now that DDT had its limitations, that insects could develop a resistance to it.

As the use of quaternaries expanded, certain of their limitations began to appear. We now know that it would have been preferable for research and development workers to have investigated the properties of quaternaries more completely before they were marketed. As it was, the users and public officials had to determine some of these properties or limitations, as with DDT, in actual use. As these limitations were discovered one by one, dyed-in-the-wool or conservative chlorine users might well be excused for taking an "I told you so" attitude. Their product appeared to be unassailable and needed no defense.

Improvements Now Made

HOWEVER, of late, improvements have been made in the quaternary products now offered to the public, but it has become the practice to compare these newest products with the older quaternary product and attach the "New and Improved" label at every opportunity, even though many of the improvements are necessitated by inherent limitations and deficiencies. There has been so much publicity for quaternaries recently that any layman or newcomer could well be excused for coming to the conclusion, after an examination of recent literature, that quaternaries were the only products used for sanitation. We believe that for a correct evaluation of quaternary products, the all important comparison with chlorine must be made.

Possibly, one of the main ob-

Editor's Note

Although we realize the controversial nature of the paper beginning on this page, we are publishing it because of the widespread interest it has aroused. However, by publishing it we are not necessarily indicating our approval of the views contained in the paper, some of which we do not agree with. At the same time, we are inviting others who are interested in the subject to express their viewpoints.

* Before 30th mid-year meeting, Chemical Specialties Manufacturers Assn., Chicago, June 13, 1950.

TABLE I—Effect of water hardness on ppm. of disinfectant necessary to kill in 10 minutes at 68° F. and not in five minutes.

Disinfectant	Hardness	
	Zero	400 ppm.
Sodium hypochlorite ..	5	5
Quaternary A	25	10,000
Quaternary B	75	150
Quaternary C	150	500
Quaternary D	400	2,500
Quaternary E	10	50
Quaternary F	50	150

jections to the general use of quaternaries is that they are affected by the nature of the water employed in making up disinfecting solutions. All of us, we believe, owe thanks to the U. S. Public Health Service, Water and Sanitation Investigations Station at Cincinnati, O., which realized the practical importance of the fact that the bac-

TABLE II—Effect of temperature of 200 ppm. hardness water on ppm. of disinfectant necessary to kill in 10 minutes.

Disinfectant	Temperatures		
	68° F.	50° F.	40° F.
Sodium hypochlorite ...	10	10	10
Quaternary A	50	20,000	20,000
Quaternary B	100	150	500
Quaternary C	300	300	500
Quaternary D	2,500	5,000	20,000
Quaternary E	25	100	400
Quaternary F	100	250	400

coccus pyogens var. *aureus* is added to 5 cc. of the disinfectant. After various intervals of time, loopfuls are transferred to sterile broth for incubation for 48 hours.

Our reason for using a mixed culture of both gram negative and gram positive organisms is because the quaternaries are more active on the

is particularly significant when it is considered that in some areas of the country water is encountered with a hardness in excess of 1000.

Hypochlorites Unaffected

HYPOCHLORITES are completely independent of water hardness and in this they are far superior to quaternaries. Another effect of practical importance is that of temperature. Both hypochlorites and quaternaries are more active at higher temperatures. However, in many sanitation uses, especially in the winter time, disinfecting solutions are made up in cold water.

Table II shows that the activity of hypochlorites is unchanged from 40 to 68° F. while the activity of the quaternaries listed drops off sharply and that ordinary disinfectant dilutions would no longer be germicidal.

Table III shows the effect of the presence of two kinds of organic matter on germicidal efficiency. This shows that quaternaries are more affected by the presence of milk solids than hypochlorites. It might be added that it is precisely because hypochlorites are affected by such organic matter that the separation of cleaning and disinfection has become standard practice and yet, in the face of such results, the combined cleaner-sanitizer is again being advocated.

The effect of the alkyl aryl sulfonate is of practical significance. Such products are commonly used as detergents and traces might well be found on equipment that has been cleaned. It further brings out the fact that quaternaries as cationic agents are completely incompatible or inactivated by all the anionic agents including the very large body of synthetic detergents known as the alkyl aryl sulfonates, the alkyl sulfates and the soaps. Great care must be exercised with quaternaries in ensuring that no contact is made with such products.

From the comparisons that we have made, the only conclusion to be drawn is that the generally superior germicidal properties of chlorine outweigh its one disadvantage—its odor—for all except the most sensitive and

TABLE III—Effect of two kinds of organic matter on ppm. of disinfectant necessary to kill in 10 minutes at 68° F.

Disinfectant	Distilled Water	500 ppm. alkyl aryl sulfonates	
		1500 ppm. Milk Solids	
Sodium hypochlorite	10	10	50
Quaternary A	25	1000	200
Quaternary B	50	800	200
Quaternary C	50	1000	300
Quaternary D	150	1500	400
Quaternary E	25	800	150
Quaternary F	50	500	150

tericidal activity of quaternaries was partly nullified by hard water. Considerable work since that time has revealed the extent of this phenomenon and it is now well understood. Table I shows this effect.

½ ml. of a 24 hour culture containing 33,000,000 per cc. each of *Salmonella typhosa*, *E. coli* and *Micro-*

gram positive organisms and in making comparisons as to effectiveness, it would be fairer to base results on this combination than on either group separately and it would complicate this presentation by a multiplicity of tables for different organisms.

It can be clearly seen what a pronounced effect hardness has which

A critical review of the merits of the two disinfectants. The authors conclude that the "generally superior properties of the chlorine type outweigh its one disadvantage—odor." Cite hard water effect on QAC's.

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TABLE IV—Effect of temperature on the germicidal action of quaternary G in 400 ppm. hardness water with and without sodium carbonate. Tested against agar slant mixed cultures by the F.D.A. method at 20° C.

Quaternary G	Temperatures		
	40° F.	50° F.	68° F.
	400 ppm. hardness		
500.....	++	--	--
300.....	++	+-	--
200.....	++	++	--
100.....	++	++	--
50.....	++	++	++
400 ppm. hardness + 0.5% Na ₂ CO ₃			
300.....	--	--	--
200.....	--	--	--
150.....	--	--	--
100.....	+-	--	--
75.....	++	--	--
50.....	++	++	--
37.5.....	++	++	++

they must pay dearly for their sensitivity because of the generally far higher price for equivalent killing power.

By compounding quaternaries with alkalis and non-ionic detergents, improvements have been made. Products can be made that are relatively independent of hard water and that are, if anything, more germicidal than the uncompounded quaternary. However, the specificity towards the gram positive organisms and the dropping off in activity with decreased temperature still persists. Table IV shows some comparisons between quaternaries alone and compounded with soda ash at different temperatures.

In compounding with alkalis to get these improved results, a side effect is the undesirable precipitation of the hard water salts. The usual sequestering agents, complex phosphates, often do not give satisfactory results in clearing up this precipitate without lowering germicidal potency. It was found that the incorporation of non-ionic detergents acted to disperse this precipitate to make it less objectionable and also improved the cleaning power of the product.

Again, the actual cost of quaternaries based on germicidal action is higher than for chlorine. To compete, therefore, economies had to be found in operating costs. Probably for this reason, the emphasis is now placed on the use of quaternaries as cleaner-sanitizers allowing for one operation in-

stead of two, and thus offsetting higher material costs. Thus, the combination of an alkali-quaternary and a non-ionic was considered not only to increase germicidal potency and to reduce such adverse effects as were caused by hard water, but also to produce a good cleaning compound.

The quaternaries also suffer in that they are strongly adsorbed on to surfaces. The bacteriostatic film that remains is advantageous, but it tends to cause any scum or precipitate in the solution to adhere strongly and spoil the appearance of containers or equipment. It is so pronounced in some industries, that periodic rinsing with acid is required for its removal. The non-ionics help somewhat to suppress this activity.

The generally accepted method of use of a good quaternary cleaner-sanitizer involves the use of the product at a strength sufficient to give 200 ppm. of quaternary in the solution. The equipment is usually rinsed with water, cleaned with the detergent-sanitizer which is not subsequently rinsed off but is left to utilize its bacteriostatic properties. Many health authorities that allow such a procedure in the dairy industry insist that before use the equipment must still be subject to a chlorine rinse. However, in many instances this step is ignored in an attempt to reduce to a reasonable figure the costs of disinfection and cleaning.

So far many laboratory tests

have failed to demonstrate any definite superiority of the quaternary cleaner-sanitizer method over present practices. As a result, various official bodies have been hesitant in allowing more widespread use of quaternary products. In an effort to surmount this difficulty, the proponents of the quaternary cleaner-sanitizers are concentrating on field tests where one product or method is used extensively in a limited area under careful supervision and the results compared with a similarly supervised test with another product or method. The quality of the end product so processed is carefully observed with the hope that the results will show that an equally high quality product has been obtained through the use of the newer method.

Such field results do not take into account all the variable possibilities. It is our belief that before a new product is accepted, both field and laboratory results must be good and good results from the field should not be used to bolster poor laboratory results. As one minor example, very extensive field tests done in the summer could look very promising, and yet, if the same work had been done in the winter the results might have been reversed due to the known lowering of activity with temperature of the quaternaries.

We have been interested in detergent sanitizers since it appeared to us that they represented the best way to use quaternaries and in a form which seemed to have a potential use. However, we were a little worried by this tendency to concentrate on field work and to evaluate quaternaries on the results therefrom. Accordingly, we have continued a series of laboratory tests on these products and believe that we have determined important evidence that must be considered in any evaluation of these products.

Quaternary compounds are not particularly soluble in water. In combining them with alkalis and non-ionic detergents solubility is often lowered. We have found that if additional alkalis are added to disinfectant solutions of such quaternary products, the quaternary can be salted out from the solution, thereby losing its disin-

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TABLE V
Effect of "salting out" on germicidal action of cleaner-sanitizers, 400 ppm.
hard water at 40° F., mixed organisms.

Ppm. of Quaternary	5% Quaternary C 10% Non-ionic W 85% T.P.P.	5% Quaternary H 10% Non-ionic W 85% Na ₂ CO ₃	5% Quaternary C 10% Non-ionic W 85% T.S.P.P.	Ppm. of Quaternary	5% Quaternary C 10% Non-ionic X 85% Na ₂ CO ₃
2000	++	++	++	500	++
1000	++	++	++	400	++
500	++	--	--	300	++
400	++	--	--	200	--
200	--	+	--	150	--
100	--	++	++	100	--
50	++	++	++	75	--
				50	++
				37.5	++
				25	++

Non-Ionic W — Polyoxyethylene derivative of an octyl phenol
 Non-Ionic X — Polyoxyethylene derivative of a dodecyl mercaptan

fectant properties even though it still may be a detergent or cleaner. This discovery led us to another experiment. We tried using higher concentrations of detergent sanitizers.

Table V shows the effect of using various concentrations of detergent sanitizers of the compositions shown. It shows that at very low dilutions there is no killing action. This is to be expected. As the concentration is increased, germicidal action commences and it remains until a higher concentration is reached, at which point it stops completely. This is very important. We will always have the fellow with us who thinks that if a certain concentration will do a good job, then twice or three times should do an even better and faster job. He is as prevalent as the fellow who will try to get away with using less or none of the proper materials.

Urges Easy Test

PUBLIC HEALTH authorities have always taken cognizance of this last individual by their insistence on

easy tests to determine if the proper minimum strengths of solutions are being employed at all times. Considerable effort has been spent in an endeavor to perfect a test for quaternaries that will show a minimum concentration of quaternary. In the light of these new results, we believe that health authorities should insist on a test to show a maximum or that the quaternary has not been salted out. It might be added that it cannot easily be determined visually—there is no sudden appearance of a precipitate that could act as an indicator. The solutions at a germicidal concentration and at higher and non-potent strength look identical. As it stands now, we could have an ineffective disinfectant even though the various quaternary tests would indicate a satisfactory product. We believe that serious consideration must be given to this phenomenon since it definitely is an adverse property as compared with chlorine.

An even more important adverse property is one that we have considered very carefully in our laboratory. Quaternaries are not truly and

completely compatible with the non-ionics. We have found that all the commercially available non-ionics have a definite and almost specific negative or inactivating effect on the germicidal potency of the quaternaries, regardless of whether they are compounded with alkalis or not. We have gone into this effect very completely and a paper detailing our results is being published elsewhere in a scientific journal.

However, Tables VI and VII summarize some of our findings. Table VI shows the effect of compounding one quaternary with four different concentrations of a non-ionic with soda ash as a common alkaline ingredient when made up in 400 ppm. hard water.

A very similar pattern is shown (Table VII) with other quaternaries with the same and another non-ionic. The water hardness is not a prime cause since an identical pattern is shown if solutions are made up in distilled water and furthermore, the same effect occurs with other alkalis such as trisodium phosphate.

(Turn to Page 137)

TABLE VI—Effect of non-ionic W on quaternary E tested in the presence of 400 ppm. hard water and soda ash. F.D.A. method, 5 and 10 minute interval transfers, temperature 20° C.

Quaternary E ppm.	Parts per Million Non-Ionic W			
	0	200	500	1000
250			--	--
200			--	--
150			--	+
100	--	--	+	+
75	--	--	+	+
50	--	--	+	+
37.5	--	+	--	--
25	+	+	+	+

TABLE VII—Effect of two non-ionics on four quaternaries tested in the presence of 400 ppm. hard water and 1700 ppm. sodium carbonate. F.D.A. method, temperature 20° C.

Parts per million required to kill in 10 minutes but not in five minutes

		Non-Ionic W			Non-Ionic X		
		200	500	1000	200	500	1000
Quaternary B	25	25	37.5	75	25	25	50
Quaternary C	50	75	100	250	50	75	150
Quaternary E	25	37.5	100	200	25	75	150
Quaternary H	75	75	150	200	75	75	150
Quaternary E	25	As above but with TSP instead of Na ₂ CO ₃					
		25	75	100	37.5	75	100
Quaternary E	10	With soda ash but in distilled water					
		25	50	75			
Quaternary E	25	With no alkali and in distilled water					
		25	50	100			

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IBP	290.0
5 ml.	293.0
50 ml.	295.0
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Compressor piping frames this picture of a Jefferson ethylene unit (purification section) at Port Neches, Texas.

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Briefs

From recent literature

Non-volatile solvents which enable insecticidal resins and cyclohexenone synergists for such resins to be used together in an effective state of solution may be made from sodium salts of alkyl phenols and 2,2'-dichlorodiethylether.

High melting synthetic waxes have been prepared by the reaction of long chain alkyl phenols with 1,4-dichlorobutane. Such waxes are compatible with other waxes, such as beeswax and petroleum waxes, and may be used in combination with them to raise their melting points.

Surface active agents made from alkyl phenols and ethylene oxide tend to be viscous and can be more easily purified in dilute aqueous solution. The agent can be recovered as a concentrated solution by heating the dilute solution to cause a phase separation. The composition of the phases is related to heating temperature, which is usually about 100° C. Use of the aqueous phase as the diluent for additional unpurified product makes possible recoveries of nearly 100%.

Lubricating greases stabilized against oxidation as well as oil separation and structural breakdown are obtained by the addition of a small amount of condensation product of formaldehyde and higher fatty acid esters of an alkyl phenol with a side chain of 4 to 12 carbon atoms.

These developments are abstracted from recent publications or U. S. patents. The uses may suggest other applications of Jefferson Alkyl Phenol C-9 in your products or processes.

Safe Floors and Floor Finishes

STATISTICAL surveys of accidents show that slips and falls are responsible for a surprisingly large number of serious injuries and accidental deaths each year. Furthermore, the direct cost and the loss in productivity due to such accidents create a considerable economic drain on the country. Slippery walkway surfaces are undoubtedly responsible for many of the accidents. Therefore the slipperiness of a walkway surface is an important factor and should be considered in the selection of floors and floor finishes.

A particular type of walkway material is often thought of as having a single coefficient of friction or at most a narrow range of coefficients. Such is not the case. Slipperiness is not a constant of the walkway material or of the footwear but is a function of the contact surfaces of both and is materially affected by their con-

By Percy A. Sigler

National Bureau of Standards

dition. A person who undertakes to dance on a waxed floor with rubber-soled shoes in place of leather-soled shoes experiences this fact. Rubber soles snub, whereas leather soles slide readily.

The location of a floor relative to building entrances and to certain processes determines to a large extent the texture due to surface wear and thus its slipperiness. The surface of a marble or concrete floor may become scratched and roughened to an appreciable degree from wear when located close to a street entrance, whereas the surface of a similar floor may become smooth or even glazed when located some distance from a street entrance or other source of abrasive grit. Whether the floors are clean or

dirty, dry or wet, are also material factors.

Measurement of Slipperiness

THE establishment of a safety code for walkway surfaces has been materially handicapped by the lack of an adequate method of measuring slipperiness. The correlation between coefficients of friction as commonly measured, and slipperiness as actually experienced, is not good, especially where wet surfaces are involved.

A dynamic pendulum-impact type slipperiness tester has been designed at the National Bureau of Standards (see figures 1 and 2). The design is based on the premise that, in the process of ordinary walking, slipping is most likely to occur when the rear edge of the heel contacts the walkway surface. The instrument is portable and can be used to test floors in actual service.

By means of a pendulum, a

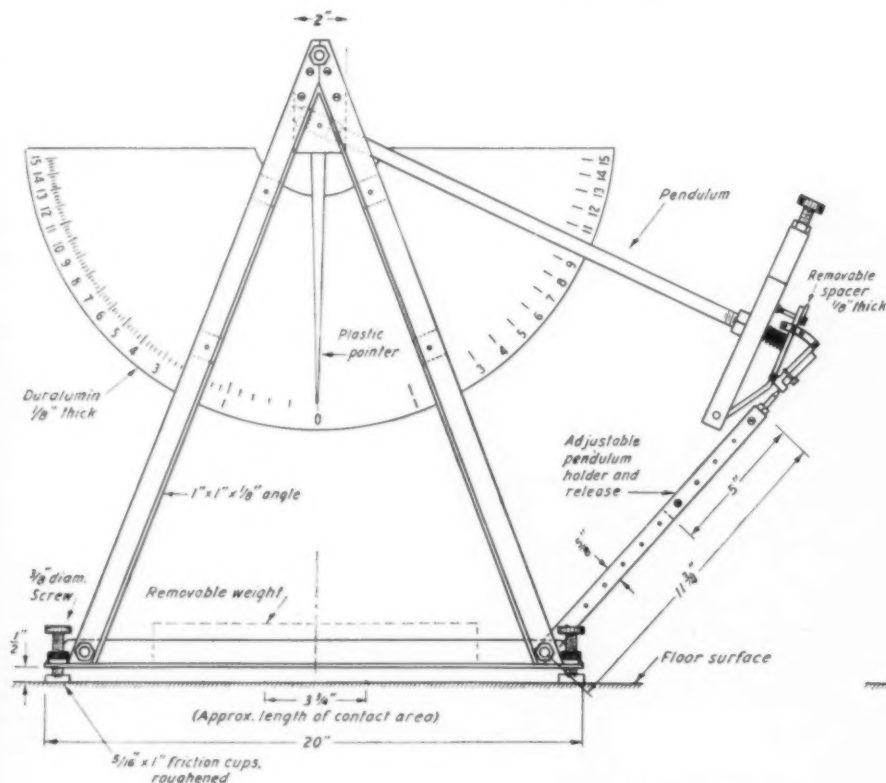
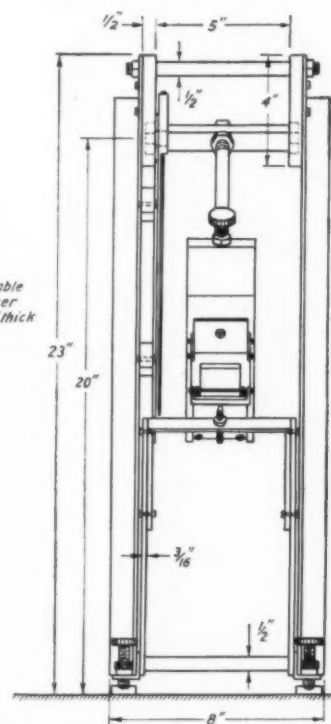
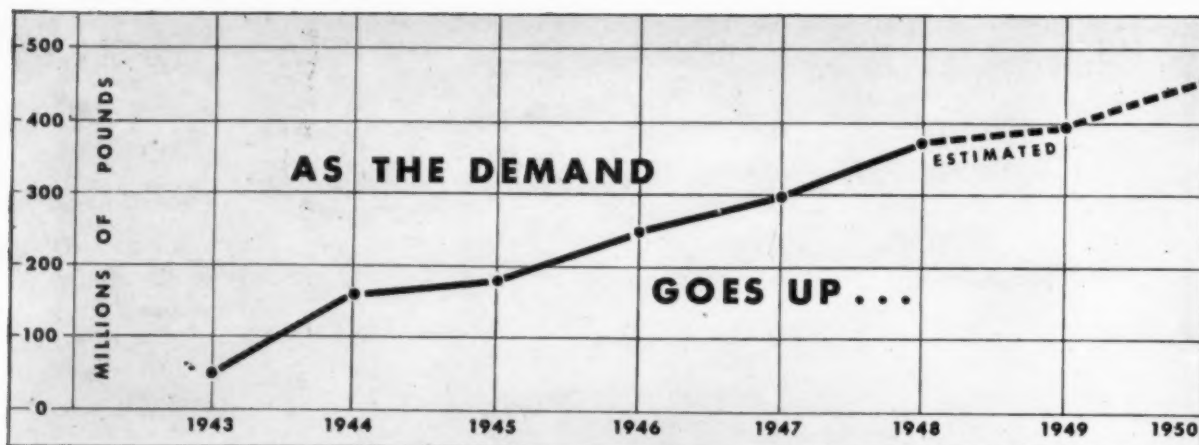


Figure 1. Dynamic pendulum-impact type slipperiness tester.





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APPLICATIONS

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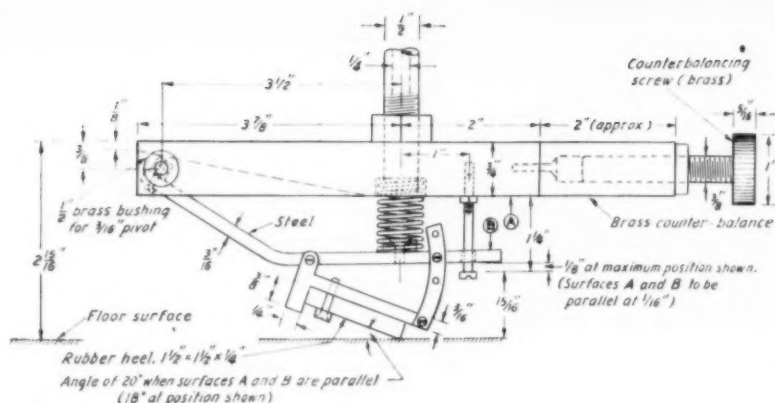


Figure 2. Detail of mechanical heel.

heel material is impacted onto and swept over the walkway surface to be tested. A mechanical heel forms the lower end of the pendulum and is so arranged that a $1\frac{1}{2}$ -inch-square test piece of rubber, leather, or other heel material can be attached to the underside at an angle of 20 degrees so that only the rear edge of the test piece makes contact with the walkway. A helical spring is used to press the edge of the heel material against the walkway during contact. A pointer attached to the framework records on a scale, graduated in inches of height of the center of gravity of the pendulum, the amount the swing of the pendulum is retarded by the contact. This value along with certain constants of the instrument is used to compute the dynamic coefficient of friction or "antislip coefficient" for the walkway and footwear surfaces.

Relative Slipperiness

WORK at the National Bureau of Standards on safe walkway surfaces has been devoted mainly to the development and perfection of a method for measuring slipperiness rather than to attempt, at the present time, to evaluate the relative slipperiness of a wide variety of walkway surfaces. However, the information in Table 1 based on some of our investigations may be of assistance to persons charged with the selection of floors and finishes having suitable skid resistance under specified conditions of use. The results of slipperiness tests with both rubber and leather test heels and under both dry and wet conditions

are given for various walkway surfaces. Results obtained on laboratory specimens in an unworn condition, indicated by symbol "a," and on floor areas in actual service, indicated by symbol "b," are included in the table. It should be stated that the tests under wet conditions were made on walkway surfaces covered with water and with water-soaked test heels. This is a particularly severe test for leather heels as the leather test piece absorbs considerable water and is softened thereby. Results are influenced by the degree of wetness, lower coefficients are obtained with increase in wetting.

Comments

MOST walkway surfaces give relatively high antislip coefficients with dry rubber heels, and thus good traction should be experienced with such footwear. In general, much lower coefficients are obtained with dry leather heels, ranging from one indicating poor traction, 0.3, to one indicating good traction, 0.5. Maple and steel test heels give still lower values.

When wet, many surfaces are potentially hazardous for most smooth footwear materials. Good antislip properties under wet conditions are usually associated with surfaces that are rough enough to have projections extend through a film of water and thus hinder its action as a lubricant. The projections may be part of the walkway or footwear materials themselves or may be particles of embedded sand or grit. A number of smooth-surfaced floors showed poor antislip properties when wet, whereas a concrete slab,

soapstone and limestone stair treads, an abrasive-surfaced magnesite, abrasive-filled paste, and mineral-coated fabrics having rough surfaces showed good antislip properties when wet (see Table 1).

The results given in table 1 demonstrate the importance of surface condition and the inadvisability of assigning a single coefficient of friction or even a narrow range of coefficients to a particular type of flooring or finishing material. Under wet conditions, the antislip coefficients for a concrete floor with a cement-mortar topping, which had worn smooth in over 25 years of service, were much lower than those obtained for a concrete slab ground with an abrasive prior to testing (tests 1 and 2). The skid resistance of monolithic floors, such as concrete, terrazzo, and magnesite, can be improved by the addition of abrasive aggregates. However, unless the abrasive aggregates project somewhat above the surface of the floor, their effectiveness is materially reduced under wet conditions (tests 6, 7 and 9).

Such floor coverings as linoleum, asphalt tile, rubber tile, and vinyl tile showed fair to good skid resistance when dry and clean. They would be classed as potentially hazardous when wet, and especially so when wet after waxing. With a dry leather test heel, the skid resistance of the above types of floors after treatment with various water-emulsion type waxes ranged from poor to good. Unsatisfactory traction was experienced for waxes G and H, test 15, whereas the traction experienced on asphalt-tile corridors treated with waxes I and J was considered satisfactory. Test number 16 was made on floors being maintained by a particular method and floor polish, which according to representatives of the hospital in which they are located have resulted in a material reduction in accidents due to slippery floors.

Tests have shown that the skid resistance of water-emulsion waxes under dry conditions is slightly improved by machine polishing and is materially improved by the addition of colloidal silica in a ratio of two wax to one silica (based on solids con-



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tent). No significant improvements were found under wet conditions. Of particular importance is the improvement obtained with a dry leather test heel for those waxes whose antislip coefficients are around 0.4 prior to being modified with colloidal silica (tests 18 and 19).

While relatively few solvent-

type waxes have been tested, results indicate that they are likely to be more slippery than water-emulsion type waxes (test 17).

It should be emphasized that slipperiness measurements, although significant, should not be used as a sole basis for selecting a flooring or finishing material. Other factors, such

as durability, appearance, and the ease and cost of maintenance would also need to be considered in determining the suitability of the materials.

More detailed discussions of the slipperiness tester and of some of the investigations are given in Research Paper RP 1879, "Measurement of the (Turn to Page 143)

TABLE 1. RESULTS OF SLIPPERINESS TESTS

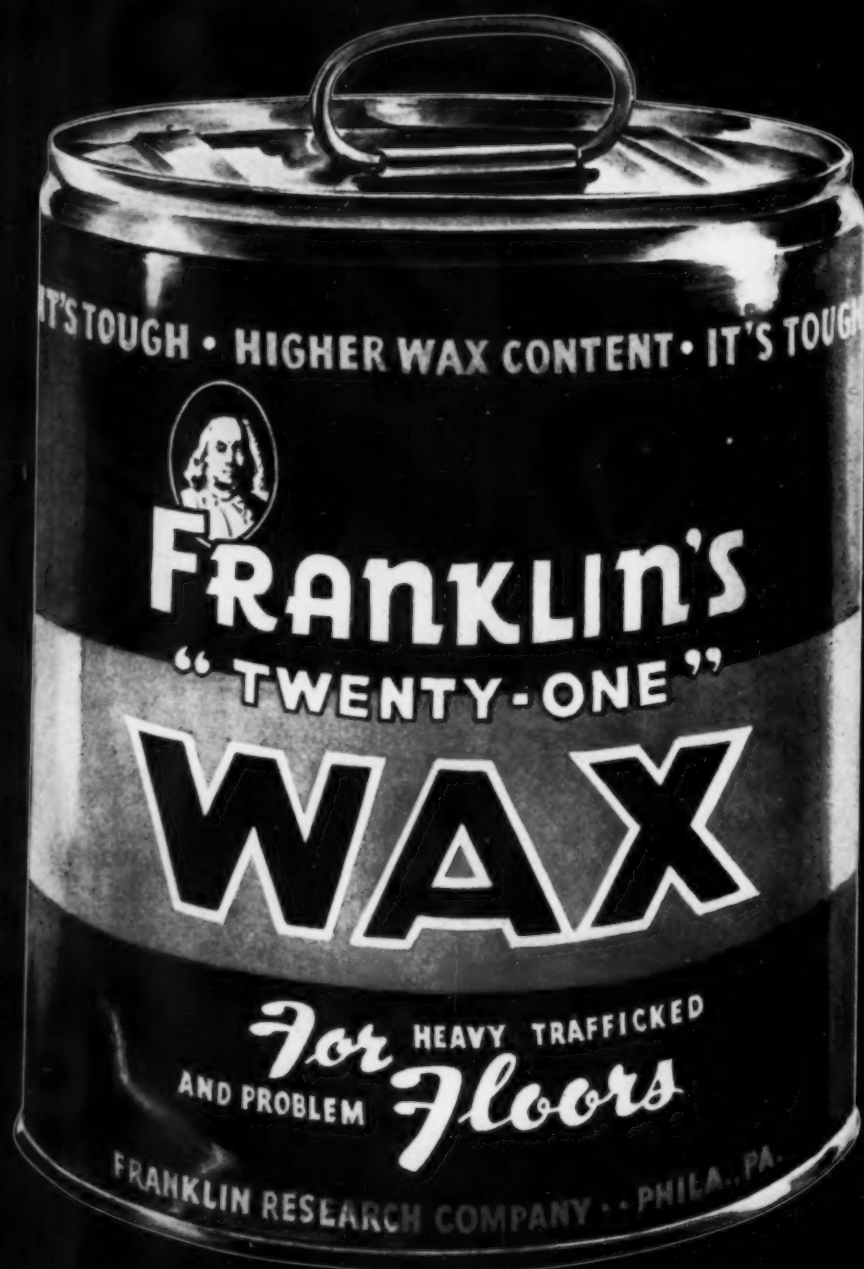
Test Number	Walkway Surface	Antislip Coefficient			
		Rubber Heel		Leather Heel	
		Dry	Wet	Dry	Wet
1	Concrete slab, ground with No. 160 carborundum ^a	0.65	0.60	0.37	0.43
2	Cement-mortar topping, worn smooth ^b.....	.64	.28	.37	.19
3	Soapstone stair tread, sand-rubbed finish ^a.....	.69	.59	.42	.45
4	Limestone steps, outside entrance ^b.....	.58	.45	.44	.32
5	Terrazzo, inside entrance ^b.....	.52	.29	.31	.22
6	Terrazzo, worn smooth ^b.....	.53	.25	.35	.16
7	Terrazzo, containing alundum grit, worn smooth ^b.....	.74	.33	.44	.18
8	Quarry tile, worn smooth ^b.....	.69	.28	.31	.20
9	Magnesite, containing No. 24 alundum, surface etched with HCl ^a.....	.74	.54	.44	.41
10	Metal plate coated with abrasive paste, No. 46 alundum and phenolic resin ^a.....	.69	.45	.64	.47
11	Carborundum abrasive cloth ^a				
	30 mesh.....	.60	.54	.50	.50
	60 mesh.....	.70	.59	.54	.55
	120 mesh.....	.76	.69	.60	.58
12	Rubber-and-cotton matting, worn rough ^b.....	.61	.38	.48	.32
13	Vinyl flooring, worn rough ^b.....	.59	.35	.48	.30
14	Vinyl flooring, new installation ^b				
	Brand A.....	.71	.32	.49	.25
	Brand B.....	.63	.38	.46	.28
	Brand C.....	.68	.28	.52	.28
	Brand D.....	.69	.40	.50	.27
	Brand E.....	.64	.32	.49	.25
	Brand F.....	.75	.24	.48	.23
15	Asphalt-tile corridor ^b				
	Scrubbed and cleaned.....	.68	.35	.47	.24
	Waxed and polished, wax G ^c.....	.69	.16	.34	.15
	Waxed and polished, wax H ^c.....	.75	.18	.37	.16
	Waxed and polished, wax I ^c.....	.87	.25	.51	.21
	Waxed and polished, wax J ^c.....	.78	.23	.44	.20
16	Hospital floors maintained with floor polish K ^{bc}				
	Asphalt tile.....	.82	.29	.48	.24
	Linoleum.....	.67	.21	.40	.20
	Cork tile (sealed).....	.80	.25	.35	.22
	Rubber tile.....	.80	.32	.42	.20
17	Floors maintained with solvent-type wax L ^b				
	White-oak parquet.....	.49	.19	.24	.17
	Pressed fiberboard.....	.47	.15	.26	.14
	Rubber tile.....	.61	.17	.29	.16
18	Asphalt-tile corridor ^b				
	Scrubbed and cleaned.....	.70	..	.43	..
	Waxed, not polished				
	Wax M ^c.....	.72	..	.33	..
	Wax M ^c with silica.....	.79	..	.39	..
	Wax N ^c.....	.82	..	.43	..
	Wax N ^c with silica.....	.88	..	.49	..
	Wax O ^c.....	.69	..	.36	..
	Wax O ^c with silica.....	.78	..	.46	..
	Wax P ^c.....	.86	..	.44	..
	Wax P ^c with silica.....	.90	..	.51	..
19	Linoleum corridor ^b				
	Scrubbed and cleaned.....	.72	..	.40	..
	Waxed, not polished				
	Wax M ^c.....	.70	..	.34	..
	Wax M ^c with silica.....	.81	..	.39	..
	Wax N ^c.....	.85	..	.48	..
	Wax N ^c with silica.....	.90	..	.53	..
	Wax O ^c.....	.71	..	.38	..
	Wax O ^c with silica.....	.79	..	.45	..
	Wax P ^c.....	.84	..	.47	..
	Wax P ^c with silica.....	.95	..	.54	..

^aLaboratory specimens in an unworn condition.

^bFloor areas in actual service.

^cWater-emulsion type.

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Biological Tests of

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ALLETHRIN is the common name that has been assigned to the completely synthetic allyl homolog of Cinerin I by the U. S. Department of Agriculture, Interdepartmental Committee on Pest Control. Allethrin appears to be identical in structure with natural Cinerin I, which is one of the four constituents or compounds isolated from natural pyrethrum flowers. Therefore, it is inevitable that initial biological test work with allethrin would compare it to natural pyrethrins.

Many laboratories throughout the country are in the process of testing allethrin in comparison with natural pyrethrins on many different species of insects. Although this intensive test program is far from complete, there are some data available at this time which are indicative of the usefulness of allethrin as an insecticide.

Data obtained from certain

By Kenneth B. Nash*
John Powell & Co., Inc.

laboratories comparing allethrin with pyrethrins against houseflies by the Peet-Grady Method are given below in Table I.

The results shown in Table I indicate that allethrin is almost, but not quite, the equivalent of natural pyrethrins.

Table II gives the Peet-Grady results obtained from a concentration series of allethrin versus pyrethrins.

When these data are plotted on a log—probability scale, the allethrin curve has a steeper slope than the pyrethrins curve. Furthermore, the lines for the two materials cross, so that at low concentrations (below approximately 125 mgs/100 cc) allethrin is less effective, while at high concentrations (above approximately 125 mgs/100 cc) it is more effective, than the natural active principles of

pyrethrum. It is also interesting to note that 160 mgs. of pyrethrins/100 cc is required to give 50 per cent kill of the houseflies, while only 145 mgs. of allethrin/100 cc is required for the same kill by this method.

Aerosol formulations containing allethrin or pyrethrins alone have been bio-assayed on houseflies. See Table III for results of such tests.

The data shown in Table III indicate that 1 per cent allethrin resulted in a better 10 minute knockdown figure and equal, or better, 24 hour kill results than 1 per cent pyrethrins in aerosol.

Allethrin has been compared directly with natural pyrethrins by testing in oil solutions against German cockroaches by the direct spray method and the settling mist method. Tables IV and V give some of these figures.

From Table IV, direct spray method, it will be seen that approximately double the concentration of

TABLE I
Peet-Grady Results

Labs.	No. of Tests	Pyrethrins (mgs/100 cc)	Allethrin (mgs/100 cc)	% Knockdown 10 min.	% Kill 24 hrs.
A	4	100	—	97.3	39.8
A	4	—	100	95.8	36.3
B	—	100	—	97.9	39.7
B	—	—	100	96.6	32.8
C	40	100	—	96.1	43.8
C	39	—	100	95.7	40.3

TABLE III
Aerosols—Flies (Lab. G)

	Dose/ 500 cu. ft.	% KD 10 min.	% Kill 24 hrs.
1% Pyrethrins	1.9 gms	58.0	58.0
19% Petroleum Dists.	3.0 gms	46.5	74.2
80% Gases	4.9 gms	86.0	100.0
1% Allethrin	1.7 gms	80.8	48.2
19% Petroleum Dists.	3.0 gms	98.0	87.0
80% Gases	4.6 gms	94.0	100.0

TABLE II
Peet-Grady—Conc. Series (Lab. E)

Material	Conc. Mg/100 cc	% Knockdown 3 min.	% Knockdown 5 min.	% Knockdown 10 min.	% Kill 24 hrs.
Pyrethrins	50	40	64	90	23
Pyrethrins	100	48	65	95	43
Pyrethrins	200	59	76	97	52
Allethrin	50	27	48	78	17
Allethrin	100	39	55	88	37
Allethrin	200	47	63	94	60

TABLE IV
German Roaches
Direct Spray Method (Lab. E)

Material	Conc. mgs/100 cc	% KD 1 hr.	% Control 24 hrs.
Pyrethrins	50	90	82
Pyrethrins	100	98	96
Allethrin	100	48	64
Allethrin	200	84	87

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TABLE V
German Roaches
Settling Mist Method (Lab. C)

Material	Conc.	% KD 10 min.	% Kill 24 hrs.
Pyrethrins	.05%	100	80
Pyrethrins	.10%	100	100
Pyrethrins	.20%	95	75
Allethrin	.05%	60	55
Allethrin	.10%	100	100
Allethrin	.20%	100	90

TABLE VII
American Roaches
Settling Mist Method (Lab. C)

Material	Conc.	% Knockdown			% Kill		
		10 min.	20 min.	1 day	2 days	5 days	
Pyrethrins	.10%	0	20	10	10	20	
Pyrethrins	.20%	20	70	0	30	40	
Pyrethrins	.50%	40	100	0	100	100	
Allethrin	.10%	0	0	0	0	10	
Allethrin	.20%	0	0	0	0	20	
Allethrin	.50%	0	0	0	10	40	
Allethrin	.80%	20	40	20	80	80	

TABLE VI
American Roaches
Direct Spray Method

Lab.	Pyrethrins mgs/100 cc	Allethrin mgs/100 cc	% KD 30 min.	% Control 24 hrs.	% Control 48 hrs.
B	100	—	100	95	100
B	—	100	20	35	40
B	100	—	100	100	100
B	—	100	5	45	65
H	100	—	30	90	90
H	—	100	15	15	15

TABLE VIII
Surface Treatment Tests
On glass—8 days—Flies (Lab. J)

Material	Dosage mgs/sq. ft.	% Knockdown 2 hrs.	% Kill 24 hrs.
Pyrethrins	144	25	10
Pyrethrins	36	0	16
Pyrethrins	14.4	0	21
Allethrin	144	100	100
Allethrin	36	100	97
Allethrin	14.4	0	74

allethrin is required to equal the knock-down and kill obtained with pyrethrins. From Table V, settling mist method, it appears that allethrin is nearly equivalent to natural pyrethrins in terms of knockdown and kill of German roaches at concentrations of .10 and .20 per cent.

American roaches have also been used as the test insect in comparing allethrin with pyrethrins in oil sprays. The results of such tests by the direct spray method are given in Table VI, and by the settling mist method in Table VII.

It seems safe to conclude from the above tables that it requires two to four times as much allethrin as pyrethrins in oil sprays to obtain the same kill of American roaches by either of the above test methods.

Residual or surface treatment tests were conducted as another means of directly comparing allethrin with pyrethrins. Glass panels were treated with acetone solution, aged eight days, and then exposed to houseflies to give the results in Table VIII.

These data indicate that the residue from allethrin is superior to that of natural pyrethrins against houseflies. From a practical standpoint, the use of allethrin as a residual insecticide would be ruled out, at present, because of its extremely high cost.

Key to Laboratories that Contributed the Above Test Results:

- A. John Powell & Co., Inc.
- B. S. B. Penick & Co.
- C. Carbide & Carbon Chemicals Division of Union Carbide & Carbon Corp. (tested by Fellows at Boyce Thompson Institute)
- E. U. S. Industrial Chemical Laboratories
- G. Crop Protection Institute
- H. McLaughlin, Gormley, King Co.
- J. Rutgers University—Dept. of Entomology

Insecticidal Concentrate

Extracts of pyrethrin and rotenone, prepared separately with the use of solvent, are concentrated, mixed with oleic acid, potash soap, cyclohexanol, anhydrous vegetable and essential oils, and glue, to give a product of long-keeping quality which emulsifies well in hard water. S. Kondo, to Teikoku Jochugiku K. K., Japanese Patent No. 175,047; through *Chem. Abs.*

Pyrethrin-like Synthetics

The reaction between substituted glyoxals of the type $R'COCHO$, and salts of substituted acetoacetic acids of the type RCH_2COCH_2COOH , yields 2-hydroxy-1,4-diketones. On treatment with alkali,

these cyclize to 2,3-disubstituted-4-hydroxy - 2 - cyclopentenolones. The chrysanthemum monocarboxylic acid esters of certain of these cyclopentenolones exceed the pyrethrins in insecticidal activity to house flies. One such synthetic compound appears to be a geometric isomer of natural cinerolone. M. S. Schechter, N. Green, and F. B. LaForge, *J. Am. Chem. Soc.* 71, 3165-73 (1949).

Amberol in Wax Report

"Amberol 750," a fortified rosin ester, as a modifier of wax emulsions is discussed in a recent bulletin of the Resinous Products Division of Rohm & Haas Co., Philadelphia. The bulletin, a report of a recent laboratory study of the ester, points out that the Amberol gives good leveling and high gloss to wax emulsions, eliminating high spots and streaks inherent in unmodified emulsions. The resin is said to have a pleasant odor and is readily incorporated into wax emulsions, where it enhances the stability of the emulsion despite repeated freezings.

A report of the laboratory study, including directions on preparation of emulsions and suggested formulations, is available on request to the manufacturer.

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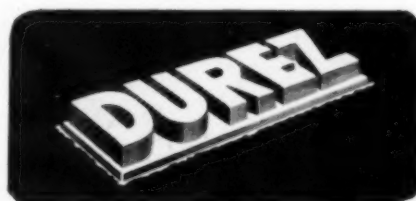
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Testing Germicides

Variation in beef extract affects standard phenol coefficient test

By G. R. Goetchius

Research Laboratories, Rohm & Haas Co.

DURING the past few years there have been innumerable reports published concerning the inadequacies of the F. D. A. phenol coefficient method for testing germicidal potency of chemical compounds other than the phenolic or cresylic types. However, it continues to be a standard test procedure for evaluating any type of chemical bactericide. The majority of these reports has been concerned with the quaternary ammonium germicides, yet the criterion of their potency continues to be a phenol coefficient value. This value is based upon results obtained with the Hopkins strain of *Salmonella typhosa* as the standard test organism.

Our laboratory makes almost daily phenol coefficient determinations upon one of the quaternary ammonium compounds, diisobutyl phenoxy ethoxy ethyl dimethyl benzyl ammonium chloride. For over three years the critical killing dilution for this compound would consistently range from

1:18,000 to 1:25,000 with the average at 1:22,500. The resulting phenol coefficient would vary from 200 to 275, with the average being 250. These values suddenly began to be much higher with coefficients running over 400. Whereas the test culture seemed to become much less resistant to the quaternary, its resistance to phenol remained at the accepted level (1:80-1:90). The only factor which had changed when the values started to increase was a new and different lot of beef extract used in the preparation of the standard F.D.A. broth for cultivation of the test organism.

Samples of beef extract were therefore obtained from three of the leading suppliers of bacteriological culture media ingredients. The various beef extracts were used to make three separate lots of F.D.A. broth, all other ingredients being identical. A new culture of the Hopkins strain of *S. typhosa* was obtained from the American Type Culture Collection and

growth initiated in the various media with daily transfer. Stock cultures were also maintained on agar slants prepared from the respective lots of broth media. Cultures were maintained and used as prescribed in the official F.D.A. procedure.

Results of phenol coefficient tests made at varying intervals upon different lots of diisobutyl phenoxy ethoxy ethyl dimethyl benzyl ammonium chloride are shown in Table 1.

An analysis of the foregoing results shows that there is the least variation in quaternary killing dilution with beef extract "A" and the greatest variation with beef extract "B." Beef extract "A" medium gave only one unusually low coefficient (155) and one unusually high value (> 375), with an average value of about 250. Medium prepared from beef extract "B" was the most erratic, with extreme values of 190 to 500. The average in this instance was about 310. When beef extract "C" was used, the average of the coefficients was very high—390, with extremes of 220 and > 500.

This variation in beef extract is apparently one of the factors responsible for the inconsistencies in the phenol coefficient procedure. Because of its inherent nature, there is probably little that could be done toward standardizing beef extract itself, but attempts should be made toward establishing a more consistently reproducible culture medium for use in this test.

TABLE I
Phenol Coefficient Determinations on Different Media

Test Day*	Quat.	Beef Extract "A" Phenol	Coeff.	Quat.	Beef Extract "B" Phenol	Coeff.	Quat.	Beef Extract "C" Phenol	Coeff.
7	20,000	75	265	25,000	80	310	30,000	90	330
8	<20,000	75	<265	20,000	90	220	30,000	90	330
9	20,000	75	265	22,500	90	250	30,000	90	330
10	20,000	85	235	25,000	80	310	35,000	75	465
11	20,000	75	265	>40,000	80	>500	>45,000	90	>500
14	20,000	75	265	37,500	80	465	erratic	90	...
15	20,000	75	265	erratic	80	...	40,000	90	440
16	22,500	80	280	35,000	90	385	40,000	85	470
17	<20,000	90	<220	30,000	90	330	40,000	80	500
18	22,500	90	250	<25,000	90	<275	40,000	80	500
9	12,500	80	155	25,000	90	275	30,000	90	330
14	22,500	80	280	17,500	90	190	20,000	90	220
21	>30,000	80	>375	30,000	80	375	>40,000	90	>440

* = No. days broth subculture from stock agar slant.

Figures under "Quat." and "Phenol" indicate highest killing dilution.

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TECHNICAL BRIEFS

From Current Literature in the Sanitary Products Field

Parasiticial Film

A mixture containing a dispersion or solution of a desired concentration of an insecticide or fungicide and a soluble aluminum compound, dries when applied on a solid surface at a pH to precipitate the aluminum, to form a firmly adhering film. Thus, 10.8 grams of xanthone dispersed in 50 ml. of one per cent gum arabic solution and 60 ml. of one per cent aluminum sulfate solution, were poured into 2835 ml. of water. Then 55 ml. of ammonium hydroxide diluted to 10 volumes, were added. H. L. Cupples, to the U. S. U. S. Patent No. 2,448,661.

Mildewproofing Agents

Such compounds as pentachlorophenyl capryl formal and pentachlorophenyl cetyl formal have mildewproofing, fungicidal, and bactericidal properties. Fabrics impregnated with 1 per cent solutions of these compounds in petroleum ether were resistant in mildew tests, to such organisms as *Metarhizium glutinosum* and *Aspergillus niger* without loss of tensile strength. A. L. Houk, to Rohm & Haas Co. U. S. Patent No. 2,463,541.

Insecticide Trace Studies

Studies with radioactive insecticides to trace their fate in treated foodstuffs and in insects are important because insecticidal treatment of food inevitably results in the retention of residues of the compound which may affect the nutritive value of the food, or may themselves be poisonous. Studies of insects are fundamental to discovering the precise mechanism of toxic action and are particularly useful when testing or designing new insecticides.

Labeled methyl bromide is being used in the microscopic location of fumigant taken up by insects exposed

to the vapor. In this field, progress has so far been made only in experimental technique, but the first results are promising.

The radioactivity of labeled methyl bromide fixed by insect tissue is likely to be in the form of the water-soluble bromide, so that the methods of fixing, dehydration, etc., normally preceding histological examination must be avoided as they would certainly affect the distribution of the insecticide in the insect tissue. *Manuf. Chem.* 21, No. 3, 94-5 (1950).

DDT Smoke Studies

Work on DDT smokes has included measurement of toxicity to insects of the actual smoke, and the films of DDT formed by deposition of the smoke on building surfaces. It was found that not only were deposits about 20 times as heavy on the floor as on the walls and ceilings, but deposits on floor level contained 66 per cent by weight of DDT while those on the wall contained 12 per cent. *Chem. Age* 62, No. 1598, 296 (1950).

Fungicide-Treated Fabric

Results are given of two years of outdoor shade exposure, in Florida, of cotton fabric treated with fungicidal preservatives. Untreated 10 ounce cotton duck lost 67 per cent of its tensile strength in one year and 93 per cent in two years. Of the different fungicides applied to the fabric on a concentration of one per cent of the dry weight of the treated fabric, only the copper and silver compounds stood up well after two years in the field.

With the copper group the copper ion, rather than the anion or whole molecule, appeared to be the protecting agent. The mercurials and other heavy metal fungicides did not afford protection for the two-year period. The phenolic group was the only purely organic fungicides that rendered the

fabric appreciably resistant to microbial decomposition. Water-repellent treatment improved the performance of the phenolic but not the copper fungicides. Laboratory soil burial tests were, in general, in agreement with the outdoor exposure tests. S. S. Block, *Ind. Eng. Chem.* 41, 17839 (1949).

Carnauba Wax Tests

A group of carnauba wax samples were tested for moisture and dirt content, saponification value, acid number, emulsification, flash point, melting point, and iodine value. The samples were classified into four groups: (a) #1 and #2 yellow, prime waxes obtained by cutting the smaller and less mature leaf; (b) Cauhypá and North Country #2; (c) Fatty Grey and North Country #3, obtained by cutting the mature leaf; and (d) Chalky wax, obtained by adding water during the melting process.

Saponification values for all samples had a range of 70-84, indicating the saponification test to be valuable for characterization purposes. Dirt tests indicated a range of negligible to 6.5 per cent, the #1 yellow group having the lowest values with a maximum indication of one per cent. Melting point tests are good for characterization.

The lighter colored waxes yield lower acid numbers than the darker or more mature waxes possibly indicating that the chemical changes in maturing, as oxidation and degradation result in larger amounts of wax acid. None of the carnauba waxes tested had acid numbers above 5.0.

Emulsification tests on the samples were judged by surface gloss, particle size and flow characteristics. Flash points as an indication of emulsification showed that the former could not be used as a criterion for emulsification ability. Flash points in themselves varied considerably and could not be used as characterization tests. There was little variation in iodine values for the different groups, so that this test could not be used as a conclusive characterization test either. C. J. Marsel, *Chem. Ind.* 66, No. 2, 216-218 (1950).

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Toxicity of Allethrin

AN INVESTIGATION of the toxicity of allethrin (the allyl homolog of cinerin I) has been performed on material recently synthesized by the Carbide and Carbon Chemicals Division. This substantially pure compound possesses insecticidal properties comparable to the natural pyrethrins.

Repeated daily exposures of rats and dogs to aerosols, containing one per cent allethrin or comparative materials, at a dosage level of 50 grams of total formulation per 1000 cu. ft. of space caused no injury to the animals. This exposure level represents 10 times the concentration used to free aircraft of insects and about 30 times the household use level. Rats received a maximum of 85 and dogs 40 exposures, each of 30 minutes duration.

Massive concentrations of aerosols, 360 times the level used for the repeated exposures, did not harm rats in single 30 minute exposures. Even more striking is the fact that only one of 10 rats succumbed after two hours exposure to a concentration of 19.0 mgm./liter of pure allethrin fog, or an amount 10,000 times that which would be utilized to free aircraft of insects.

The single dose acute oral LD₅₀'s of commercial allethrin for non-fasted rodents observed 14 days after being fed 20 per cent dilutions of commercial allethrin in deodorized kerosene are as follows: mice 0.48, rats 0.92, and rabbits 4.3 gm./kg. Two different samples of 20 per cent purified pyrethrins in petroleum distillates had oral LD₅₀'s of 0.82 and 1.87 gm./kg. for rats.

The LD₅₀ of undiluted commercial allethrin for rabbits by single dose skin penetration based upon a 24 hour contact period under impermeous sheeting and a total 14 day observation period is 11.2 ml./kg. Dilution in petroleum distillates markedly increases percutaneous toxicity but dimethyl phthalate appears not to aid penetration.

Rabbit eyes are not injured by the undiluted allethrin, although single uncovered skin applications cause cap-

illary injection and repeated applications result in moderate erythema. Drill cloth impregnated with 4 gm./sq. ft. of allethrin caused marked erythema of the rabbit trunk when worn for three days. However, this reaction subsided with subsequent wear and during a 21 day interval no systemic injury resulted.

Guinea pigs were not sensitized by a course of eight intracutaneous injections during 2½ weeks, of a 0.1 per cent dispersion in propylene glycol and saline, followed by a 21 day incubation period before introduction of the sensitizing test dose.

The evidence presented indicates that commercial allethrin is of the same order of toxicity as pyrethrins and on the basis of this comparison the conclusion is reached that it may be used safely in insecticidal sprays and aerosols.—*Archives Industrial Hygiene & Occupational Medicine*, September, 1950.

Change in TOTA Procedure

The Scientific Committee of the Chemical Specialties Manufacturers Association Insecticide Division announced recently that it is in full agreement with S. A. Rohwer of the U.S.D.A., Bureau of Entomology and Plant Quarantine, on the necessity for a high standard of entomological performance for insecticidal aerosols.

At a special committee meeting concerning the Tentative Aerosol Test Method for Flying Insects, approval was given to the Bureau's new policy in evaluating aerosol formulas.

This announcement is to serve as official notice that the Tentative N.A.I.D.M. Aerosol Test Method for Flying Insects as printed in the May 1949 issue of *Soap and Sanitary Chemicals* has been modified in respect to dosage. Section III, B now reads "a total of 3.0 grams \pm 0.5 grams of aerosol mixture per 1000 cubic feet shall be applied in a continuous flow."

The Bureau and the Committee agree that the reduction of the dosage by 1 gram, i.e. from 4.0 grams to 3.0 grams, results in a more satis-

factory basis for eliminating insecticidal aerosol formulas that may not be up to standard. Mr. Rohwer has advised that aerosol formulas which do not meet the standard (Tentative Official Test Aerosol) on knockdown and mortality at the 3 grams dosage will not be accepted under terms of license. He has also pointed out in evaluating aerosol formulas for acceptance the Bureau considers particle size, active toxicants, ratio of solvents and toxicants to propellants and possible health hazards. It will be up to each company concerned to produce performance data supporting any new formulations they submit to the Bureau for approval.

New Maas Booklet

Release of a new technical bulletin for the photo-pure and technical grades of Maas anhydrous sodium sulphite has just been announced by the A. R. Maas Chemical Co., division of Victor Chemical Works, South Gate, Calif. The Maas technical bulletin can be obtained by writing directly to the company at 4570 Ardine St., South Gate, Calif.

To Handle Mothproofers

H. J. McAteer, 45 E. 17th St., New York, was recently appointed sales agent for the mothproofing compounds of Daniel H. Jones Laboratories, Inc., Camden, N. J.

Atlas Ups Sorbitol Output

An increase of almost 50 per cent in the capacity of its sorbitol plant at Atlas Point, Wilmington, Del., was announced recently by Atlas Powder Co., Wilmington. The new increased production is scheduled to start around Oct. 1. The firm began making sorbitol in commercial quantities at Atlas Point in 1937. Ten years later a new sorbitol plant was built at a cost of over three million dollars.

Sorbitol is an alcohol belonging to the same chemical family as glycerine, and is used for many of the same purposes. It is used by Atlas to produce emulsifiers and other surface active agents. Special types are made for use in polishes, waxes, etc.

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Aerosol Drop Measurement

The measurement of aerosol droplets by an electronic-optical system has been developed for the Army Chemical Corps by one of its consultants, Dr. R. L. Pigford of the University of Delaware, it was announced recently by the Department of Defense. By means of an optical system, a transparent photograph of aerosol spray is scanned automatically with a beam, which counts droplets and gives their widths. The new method is said to eliminate human error; and makes it easier to study the effects of changes in spray nozzle design and other external factors.

Issues Toxaphene Digest

An 85-page "Digest of Information on Toxaphene" by R. C. Roark, Division of Insecticide Investigations, Bureau of Entomology and Plant Quarantine, Agricultural Research Administration, U. S. Department of Agriculture, Washington, D. C., was issued recently. Contents include: chemistry of toxaphene, formulations, compatibility, freight classification, effect on plants, effect on animals, use of toxaphene as an insecticide against a variety of pests, a 29-page bibliography and an index of common and scientific names of insects.

Scientific Insect Control

Studies on Pyrocin and on synergists for insecticides are published in the March, 1950 issue of *Botyu-Kagaku* (Scientific Insect Control), published by the Institute of Insect Control, Kyoto University, Kyoto, Japan, which recently arrived in the U. S. Other articles include: "Studies on the Molecular Structure of BHC and its Related Compounds"; "On the Toxicity of DDT Powder to the Adult of the Common Housefly" and "On the Influence of the Nutritional Condition of the Insect Upon Their Resistability to Fumigants."

Insecticide Characteristics

Studies of the characteristics of residual insecticides toxic to the housefly indicate the following order of initial toxicity, in the order of decreasing effectiveness: DDT and gamma

benzene hexachloride; chlordane; 2,2-bis (p-chlorophenyl)-1,1-dichloroethane; and toxaphene. Decreasing order of knockdown was: gamma-benzene hexachloride; DDT; chlordane; and toxaphene. Persistence of residues in decreasing order: DDT; toxaphene; chlordane; gamma-benzene hexachloride. Fineness of DDT crystallization was associated with high toxicity and tenacity of deposit.

Oil solution and emulsions of chlorinated hydrocarbons were relatively nontoxic on whitewash, painted wood, and concrete, but in water-wettable powder form these insecticides were effective on the three surfaces. Rain reduced the residual toxicity of the insecticides tested; wind was a lesser factor. Of the newer insecticides, V4 and 497 residues on wood and glass were persistent and highly toxic. W. N. Bruce. *Bull. Illinois Nat. Hist. Survey Div.* 25, Art. 1, 32 pp (1949).

Quaternaries Vs.

(From Page 119)

As can be seen, a very considerable part of the quaternary is inactivated by the non-ionic. It is possible that the germicidal strength could be so lowered that instead of having a reserve over the minimum needed to disinfect, so much would be inactivated that a solution with greatly reduced disinfecting properties would remain.

In answer to these adverse properties, it might be suggested that all solutions should be checked with a test set before use to determine if some necessary minimum, say 200 ppm., be present and to allow for some inactivation by non-ionic. However, we have checked this and have found that many of the available quaternary test sets do not differentiate between quaternary inactivated by non-ionic. All of the quaternary shows up on the chemical test even though it is no longer available for disinfection.

Possibly, therefore, as a result of this phenomenon, non-ionics should be considered as a de-activating ingredient and so listed on the label along with the quaternary.

In conclusion, therefore, we feel

that the quaternary situation is very complex and that nothing seems to have been developed to show that such products are superior to the present cleaning and chlorine disinfection. If anything, in our opinion, the longer the quaternaries are probed, the more adverse properties that are discovered.

In our efforts to further proper sanitation we must all hope for improvements both in products and methods. It is discouraging that quaternaries have not proved as successful as we might have hoped, but perhaps in the future some new type of disinfectant may be discovered that more closely approaches the ideal. However, until then we must be thankful that we can still rely upon a proven product—chlorine.

Summary

COMPARISONS have been made showing the disinfecting properties of various quaternary products as compared with chlorine. It has been shown that the various quaternary products are very susceptible and adversely affected by:

- 1) hard water
- 2) low temperatures
- 3) organic contaminations
- 4) anionic detergents
- 5) the fact that some detergent sanitizer products can salt out their own quaternary as the concentration is increased, to give a non-disinfecting solution even though its actual quaternary content is far higher than would normally be required.
- 6) the fact that quaternaries are not truly compatible with non-ionics and that cleaner-sanitizers made therefrom all suffer a loss in available disinfecting potential. This effect can be very considerable, depending upon the particular ingredients of the sanitizer.

Because of these facts, it has been concluded that the specially chlorinated alkaline phosphate products, because they are proven and reliable, are to be preferred for sanitation regardless of the method of application.



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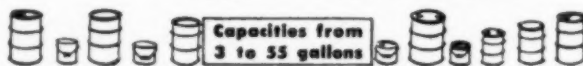
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Toilet Soaps

(From Page 35)

by crystals that exist in a rapidly soluble, readily lathering form. According to Ferguson and co-workers (8), a commercial milled soap of approximately 80 per cent tallow and 20 per cent coconut oil type, was passed through ordinary milling and plodding operations and then consisted of practically 100 per cent beta phase. The same soap was heated in a sealed container to about 190° F. and then allowed to cool slowly to room temperature: this second sample was converted (as the X-ray patterns showed) to the more durable, not quite so hard but definitely less easy-lathering omega phase. A third sample was worked up mechanically at the much lower temperature range of 50-60° F. This third sample, thus converted to the delta phase, showed a considerably reduced degree of hardness, a tendency to crack, and a free-lathering power intermediate between the maximum of the beta phase and the minimum of the omega phase (lathering ratios: 24, 5, 17, respectively).

Practical soapmakers will instantly link this delta phase formation up in their minds with the cracking tendency and somewhat reduced lathering properties that come from plodding at temperatures unsuitably low. Similarly the omega-phase soap has something in common with a framed, unmilled soap base, which tends to remain firm in water, will not readily dissolve or "waste," and of course will not give such a good lather. The important fact is that all these soaps were chemically the same soap: they differed only in the temperature, type and duration of processing treatment to which they had been subjected.

Soap Components Studied

THIS new understanding of soap phases or crystalline forms has led to a careful reassessment of the relative parts played in soap performance by the types and proportions of specific fatty acids present on the one hand (i.e. the kettle charge), and the

time, temperature and type of drying, milling and plodding (i.e. the soap finishing processes) on the other. Time, temperature and mechanical working during soap processing affect the rheological (7) and the general detergent properties (9) of the final product. British patent 562856 relates to the production "in a mass of soap of appropriate composition" of a substantial proportion of the free-lathering beta soap phase by continuously agitating the molten soap mass while it is being cooled through the crucial temperature range of 160°-115° F. All operations subsequent to this temperature-controlled agitation are kept below 160° F. in order to prevent further undesirable phase changes. It would appear that such appropriate heating and mechanical treatments may be used to produce soaps of free-lathering and good solubility properties, without recourse to the conventional aid of coconut or palm kernel oils, i.e. using only tallows, palm oils, hardened fats, etc. In any case, there is no doubt that suitable processing can and does facilitate the production of a freely lathering soap with a lower sodium laurate or myristate content than would otherwise be necessary.

The far-reaching importance of all this current research into soap phase formation cannot be overestimated. At almost all points of the soapmaking process the possibility of varying the properties of the finished toilet soap by modifying temperatures or mechanical treatments may profitably be examined. From this point of view the most important period, of course, in the soap's history is that which lies between removal of soap from the kettle and solidification, i.e. the cooling and drying period, during which maximum water loss and crystallization take place.

END PART I

(To be continued)

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New Insect Spray

A new household insecticide spray, known as "Dr. LeGear's Household Insect Spray" was announced recently by Dr. L. D. LeGear Medicine Co., St. Louis. The new insecticide is said to contain technical chlordane, pyrethrins 1 and 2, and technical piperonyl butoxide.

Pyrethrin Derivative

Allethrin, a homolog of one of the active ingredients of natural pyrethrins, has many properties comparable to the mother compound. It has knock-down toxic properties similar to those of pyrethrins, and is said to have a superior residual effect, which is an advantage in domestic and sanitary uses although possibly a disadvantage in crop protection. Like the natural product, it can be mixed with DDT.

Synthesis of the allethrin product is far from simple. The stereoisomer of cinerolone is esterified with synthesized chrysanthemum monocarboxylic acid to yield a material as powerfully toxic as cinerin I. The allyl homolog of this material, produced by modifying the side chain attached to the pentose ring of the cinerone, has been given the name allethrin. The synthesis requires 12 stages, and 11 intermediates must be processed. Altogether, 200 pounds of material have to be handled to yield one pound of allethrin. *Chemical Age* 62, No. 1610, 753-754 (1950).



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Textile Soaps

(From Page 39)

per cent each of rosin and palm oil. Cold-made fulling soaps are also described.

As was previously noted, synthetics are sometimes advantageously combined with soaps. An interesting example of such admixture is offered by Flett and his associates (25) in the following six-ounce per gallon fulling soap:

Palm oil soap.....	300 lb.
"Naeconol" NR.....	100 lb.
Soda ash.....	225 lb.
Pine oil.....	132 lb.
Water, to make.....	1000 gal.

During recent years a class of material known as fulling oils has appeared on the market. These products vary widely in composition, but some of them are known (21) to consist of 20 to 30 per cent solutions of potash red oil soap. Still others are red oil soap solutions containing variable proportions of solvents like carbon tetrachloride, benzene, ethylene dichloride with alcohol, and the like. An illustrative formula (26) for such a soapy fulling oil calls for the use of:

Oleic acid.....	70 parts
Methyl cyclohexanol..	5 parts
Carbon tetrachloride..	20 parts
Caustic potash (50° Be.).....	sufficient

Enough caustic potash is used just to produce neutrality to phenolphthalein.

In common practice, when the fulling operation is completed, the goods are taken out and trucked over to the washers. Here they are scoured in the same soap that has been used for fulling. (14) In this connection it is worth noting that, in his studies on the development of efficient wool fiber lubricants and the means for their removal, Martin (27) used a 30°-titer tallow soap in both fulling and scouring.

Soaps as Emulsifiers

SINCE soaps are among the emulsifiers most commonly used in the preparation of these lubricants, Martin's comments rate attention. He states that the soaps of fatty acids used in wool oil formulations should

not include semi-drying (e.g. corn and cottonseed oils) or drying (e.g. linseed oil) fatty acid materials, because these materials tend to oxidize, to become rancid and to cause heating of the wool stock. In addition, saturated fatty acids with high titers, like stearic and coconut, cannot be used because they precipitate at freezing temperatures. It has been pointed out (1) that the potassium and amine soaps of oleic acids, which are readily incorporated into glyceride oils or hydrocarbon oils, are inexpensive and are generally satisfactory as emulsifying agents for wool oils.

Specialized soaps for wool "throwing" may be made from olive oil foots but sometimes there is objection to their sulfur-like odor. According to Thomssen and McCutcheon, (19) who present details on a typical preparation, potash soaps, somewhat hardened with soda may also be used for this purpose.

So-called worsted soaps are sometimes used in the finishing of worsted cloth. For this purpose, says Collingridge, (12) neutral, settled soaps, based on coconut oil or palm kernel oil together with olein, are preferred. The fats are saponified with caustic soda and are grained with caustic soda lye instead of salt (to prevent the salt from "blooming" in the finished soap). Such soaps may be neutralized in the crutcher with stearic acid, after having been saponified in the first change, twice washed, and settled in the usual manner. A very good fat combination, says he, consists of equal parts of coconut oil, red oil and corn oil.

Silk is similar to wool in that it carries an outer coating that must be removed during processing. This coating, known as gum or sericin, is present to the extent of 20 to 30 per cent and covers the fibroin or true silk fiber. The simplest method of removing the gum is by steeping in a boiling soap solution; the speed of the degumming being controlled by such factors as temperature, soap content and pH. (28)

Olive oil soda soaps, of the type frequently referred to as Marseilles soaps, are still regarded by many

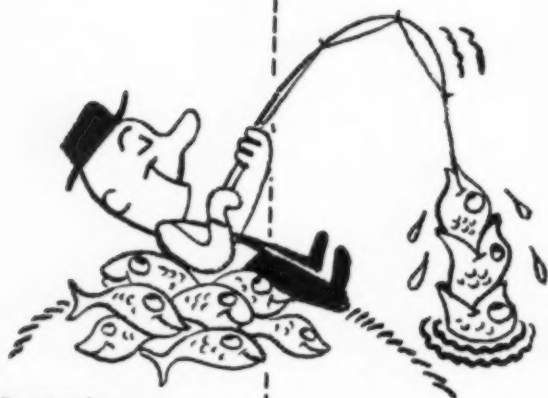
textile men as the ideal soap for degumming silk. (12) They are characterized by high solubility and rinsability, their mildness and their ability to form stable emulsions. (21, 29) Alternatively full boiled, settled soaps made from olive oil foots are used. In addition, palm oil and peanut oil soaps are used for silk degumming. Soaps made from combinations of house grease and red oil, or from olein alone, are also employed for this purpose. (19) Bray, (30) for example, in his discussion of methods for controlling the type of finish on silk, recommended degumming formulas based on flaked sodium oleate soap.

Sometimes a soft potash soap is needed instead of a hard soda soap. To meet this requirement, Thomssen and McCutcheon suggest a soap made by the semi-boiled process and consisting of a combination of grease, oil, olive oil foots and caustic potash. Referring to soaps used in dyeing silk, these authorities state that any good olive oil, palm oil or red oil soap may be used. Soaps for this purpose should be well made and free of rosin or other building materials.

In the case of cotton, which contains much less dirt and impurity than wool or silk, the cleaning operations are usually performed after weaving and before dyeing. In both kier-boiling and open boiling, processes designed to remove the natural waxes, pectins and soil and to improve absorbency, soaps appear quite satisfactory and find wide employment. (1) According to Martin, (16) a tallow soap or a soap made from tallow and a small amount of coconut oil is usually employed. The soaps should be slightly alkaline, since this assists the cleansing operation. A similar view is given by Thomssen and McCutcheon, who also note that ordinary chip soap is suitable for cleaning cotton goods. (19)

Soap is also utilized in the dyeing and printing of cotton and other cellulose fabrics. (31, 32) In the "after-soaping" or "after-washing" operations, excess dye is removed, colors are brightened and developed, and fastness is improved. In the printing processes, such operations serve to remove

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printing paste thickeners and to sharpen the designs. Soaps made with olive oil foots are generally used in these after-treatments, but palm oil soaps are also employed. Red oil soaps are also useful in printing. All such soaps should be as neutral as possible, readily soluble and free from rosin and fillers. (16, 19)

In the case of rayon or other synthetic fibers, the scouring process is carried out under much milder conditions than are necessary with cottons. It has been said (33) that soap is a very good scouring agent for rayon fabric, since it is proved by experience that it has sufficient "body" to remove oils and other impurities. Starches are also satisfactorily removed from the fabric if present to a small extent. Olive oil soaps and other low titer soaps are frequently used. Sometimes a synthetic detergent is added to the soap. (1)

Used alone or in conjunction with synthetics, soap is also employed in scouring baths and dyebaths. (8, 26) Recently, in discussing the scouring of nylon stockings before dyeing, DeTurck (34) stated that he is partial to soap as the main scouring ingredient and emulsifying agent. In describing a process for the single-bath method of scouring and dyeing, he presented a "quite suitable" formula for this purpose containing:

	per cent
Low-titer soap (e.g. Olate or Vertex flakes)	4-6
Sulfated fatty alcohol (e.g. Duponol D)	2-4
Trisodium phosphate	2-3

It is said (1) that, in general, the synthetic protein fibers are so sensitive to alkali that they cannot be scoured with soap.

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Safe Floors

(From Page 125)

Slipperiness of Walkway Surfaces," by P. A. Sigler, M. N. Geib, and T. H. Boone, *J. Research NBS*, Volume 40, 339-346 (May 1948). Reprints of the article can be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. for ten cents.

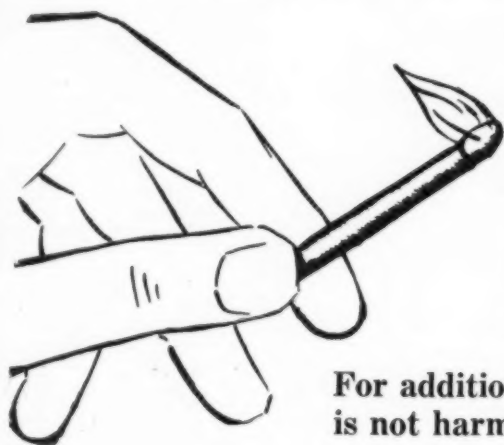
N.S. & D.A. Meets

All officers and members of the executive board of the National Sprayer & Duster Association were re-elected at the fifth annual meeting held in Chicago recently. Officers serving their second terms are: C. D. Leiter, of F. E. Myers & Bro. Co., Ashland, O., president and chairman of the executive board; R. B. Chapin, R. E. Chapin Mfg. Works, Inc., Batavia, N. Y., vice-president; D. P. Lewis, H. D. Hudson Manufacturing Co., Chicago, treasurer; Earl D. Anderson and Frank J. Zink of Frank J. Zink Associates, secretary and counsel, respectively. The executive board is composed of the following, in addition to the officers: P. L. Hauser, Lowell Manufacturing Co., Chicago; H. F. Brandt, Dobbins Manufacturing Co., Elkhart, Ind.; R. C. Hudson, H. D. Hudson Manufacturing Co., Chicago, and T. M. Burton, vice-president, D. B. Smith & Co., Utica, N. Y.

In his report as president, C. D. Leiter cited the progress of the industry during the past year. He singled out particularly the development of new and improved equipment for applying pesticides. He also mentioned that chemical spraying around home grounds is fast replacing hand digging of weeds.

A motion picture, "Vegetable Insects," produced by the Film Board of Canada was shown, and a report of the association's publicity committee told of the progress being made in the preparation of a new industry publication on the selection, use and care of spraying and dusting equipment. The publication is scheduled to appear later this year.

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Meyer & Son Expand

The completion of an addition to its plant at 1306 Canton St., Dallas, which will expand the firm's manufacturing and warehousing space, and triple shipping and receiving facilities, was announced recently by H. B. Meyer & Son; manufacturers and distributors of janitor and sanitary supplies. At the same time it was announced by A. B. Meyer, head of the firm, that the company had developed a new liquid floor cleaner, "Pep-Sene."

Bostwick Answers F.T.C.

Bostwick Laboratories, Inc., Bridgeport, Conn., denied recent Federal Trade Commission charges of misrepresentation in the sale of four insecticides. Products covered include: "Hep Aerosol Insect Killer," "Bostwick Safe-lex Insect Killer," "Bostwick Super-Aerosol Insect Killer" and "Bostwick Moth Proofer."

Bostwick admits dissemination of the advertisements concerning the products, but denies that they are typical as alleged. It further points out that the quoted excerpts are 'taken out of context, abbreviated and otherwise not set forth as originally presented.'

The answer to the F.T.C. charges denies that the company made the representations challenged by the complaint and also denied that any of the claims are false.

The complaint of the Commission characterized as misleading certain representations concerning the effectiveness of the products and also attacked as deceptive certain unqualified claims as to the safety of the insect sprays.

Smith Powell President

H. Alvin Smith, executive vice-president of John Powell & Co., New York, was elected president at a recent meeting of the board of directors. A graduate of New York University, he has been with the firm since 1941. Two years later he was named treasurer, and vice-president in 1945. He was appointed chief executive of

the company when Mr. Powell resigned in 1948.

W. J. Pollert, vice-president, previously in charge of production,



H. ALVIN SMITH

has been put in complete charge of all operations.

Dr. Alfred Weed, who headed domestic sales, is now director of sales and promotion.

Residue Hearings Sept. 11

Residue tolerance hearings before the Food and Drug Administration were to resume Sept. 11, in Washington. The session was to last about one week. Thus far a total of 8812 pages of testimony has been taken since January, with 1771 pages since July.

Henry G. Provost Dies

Henry G. Provost, vice-president and Cleveland manager of Rochester Germicide Co., Rochester, N. Y., died August 9. He joined the firm in 1920 as a salesman working out of the New York office and covering the New Jersey territory. He was particularly well known to the public school trade in northern New Jersey. In 1937, he was appointed manager of the Rochester district sales office, and in 1948 was advanced to the post he held at the time of his death.

Mr. Provost was a former member of the Rochester Chamber of

Commerce and Rotary Club and later joined the Cleveland Rotary Club. He was treasurer of Hayden Co. of Rochester and held a similar post with the First Presbyterian Church of Pittsford, N. Y.

Survivors include his widow and one son, Donald Provost of Roselle, N. J.

Sterwin in New Quarters

Executive offices of Sterling Drug, Inc., New York, including the Sterwin Chemicals subsidiary, recently were moved to 1450 Broadway.

AHA Pest Control Manual

Issuance of its "Pest Control Manual," prepared by York Research Corp., Stamford, Conn., and designed to assist in the identification of insects and pests and to provide the best methods of eradication, was announced recently by the American Hotel Association, 221 W. 57th St., New York 19.

The illustrated report deals with common insect pests and their habits, as well as describing control materials, methods of applying them and the problems encountered in their use. An abstract of the information has also been arranged in chart form for quick and easy reference.

Sanders Retires from CSC

James G. Sanders has announced his retirement from Commercial Solvents Corp., New York, effective August 1. He had been with the firm for the past five years. Following a vacation, Dr. Sanders expects to form a new connection.

A past president of the American Association of Economic Entomologists, Dr. Sanders served both Government and industry during the past fifty years. Following a tenure with the U. S. Department of Agriculture, where he became an authority on scale insects, he organized in 1910 the department of entomology of the University of Wisconsin. Later he was made state entomologist and eventually became head of the experiment station and department of entomology.

During the last war, Dr. Sanders traveled to South America and Persia on government missions.

Here's the
SIMPLEST WAY
to make
**TOP QUALITY
DISINFECTANTS**

You can easily obtain disinfectants of high bactericidal efficiency—for use in restaurants, hotels, hospitals, commercial buildings, industrial plants and homes—by using Nopco® 1444 and Albasol® AR, Nopco's outstanding emulsifiers for pine oil.

NO { *heat
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caustic soda
caustic potash
—or other chemicals*

SIMPLE HAND MIXING IS ALL THAT IS NEEDED

You have only to add pine oil to either Nopco 1444 or Albasol AR, stir (at room temperature) until a uniform mixture is obtained, and then add water. Special technical knowledge or equipment is absolutely unnecessary.

And the finished disinfectants, you'll find, are not only effective germ killers but—since they are brilliantly clear—are attention-getters, with exceptional sales appeal.

Nopco 1444—is a clear, light amber liquid base, designed to carry 4 parts of pine oil. Soluble pine oils prepared with this base are emulsifiable in either warm or cold water in all proportions. Phenol coefficients of 2, 3, 4, 5, and 5-plus are easily obtained.

Albasol AR—is a special highly concentrated emulsifier, somewhat darker than Nopco 1444. It possesses unusual carrying power for pine oil and blends readily to produce brilliantly clear disinfectants. Formulas giving phenol coefficients of 2, 3, 4 and 5 are easily compounded.

Learn all about these remarkable bases—that make it possible for you to produce top quality disinfectants economically, in the simplest manner ever devised! Fill in the coupon and mail it to us today.

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Gentlemen:

Please send me full information about Nopco 1444 and Albasol AR bases for Pine Oil Disinfectants.

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Firm.....

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FLOOR FINISHES

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**USE FEDERAL
STRIP-FAST**
**QUICK ACTING SEALER
AND FINISH STRIPPER**

NON-INFLAMMABLE

No Fire Hazard
No Neutralizing
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Economical

JUST APPLY...



Use a lamb's wool applicator or brush—no caustic or acids to burn the skin. Blisters sealers and finishes in just a few minutes.

then BUFF



Will not clog steel wool pad—buffs clean and dry. **NEEDS NO AFTER-RINSE OR NEUTRALIZING.** Will not discolor wood. Send for **FREE** testing sample.

Federal **VARNISH DIV.**
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Wax Rules Group Meets

The industry committee on the proposed Trade Practice Rules for the Floor Wax Products Industry, as recommended by the Federal Trade Commission, was scheduled to meet in Washington, Sept. 14 to discuss these rules. Melvin Fuld of Fuld Brothers, Baltimore, is chairman of the committee.

A preliminary meeting of the Industry Committee was held in New York, July 11.

Rubber Assn. to Test Prods.

Manufacturers of cleaners and polishes intended for use on rubber flooring were advised recently by the Rubber Manufacturers Association, 444 Madison Ave., New York 22, that they have until Dec. 31, 1950 to have their products tested and approved by the association's Rubber Flooring Manufacturers Division. The cost of the testing, which is done by Skinner & Sherman, Inc., Boston, is \$25 for the polish test and \$20 for the cleaner test. Approved products are put on an approved list, which may be purchased from the association at cost.

Copies of the association's specifications for rubber floor cleaners and polishes are attached to the form letter sent to manufacturers of these products, as is an order form made out to Skinner & Sherman.

The plan, according to the letter, provides that manufacturers desiring to have their products tested make the arrangements with the testing laboratory. It is necessary that they first meet with the requirements of the specifications, however. Then the products are obtained by Skinner & Sherman on the open market, and when found to meet with the specification, are approved by the association. In ordering the test, manufacturers are required to advise the testing laboratory of the strongest concentration recommended for use.

The new approved list resulting from the tests will be in effect from March 1, 1951 until February 28, 1953.

Private brands may be included on the approved list, and brand own-

ers desiring such listing must furnish the association with affidavits that their products are identical with previously approved factory brand products and pay the association \$5 for each listing.

Lehman Article Reprints

Reprints of an article by Arnold J. Lehman of the Food and Drug Administration on toxicity of chemicals as related to foodstuffs, part of which was presented as a paper at the June mid-year meeting of the Chemical Specialties Manufacturers Association in Chicago, are available for 30 cents from the Quarterly Bulletin, Association of Food and Drug Officials of the United States, 2411 N. Charles St., Baltimore 18, Md. The article appeared in Vol. 14, No. 3, beginning on page 82 in the July, 1950 issue.

New Candle Insecticide

An insecticidal candle that comes in a bowl four inches high which can later be used as a flower vase or ivy container is now being marketed by Victrylite Candle Co., Oshkosh, Wis. The candles retail for \$1.

Annual Huge' Meeting

The annual meeting of the sanitary engineering and consultant technician group was held recently at the new home of Huge' Co., St. Louis, according to an announcement by L. G. Huge', president. A dinner celebrating the 20th anniversary of the company was held at the end of the week of class work and was attended by sanitation engineers, consultants and administrative office personnel.

Among the features of the an-

Act on N. Y. Fire Ruling

The Fire Department of the City of New York is now reported to be taking active steps to enforce compliance with its revised caution statement for combustible and inflammable products. The new revised statement requires that the caution statement be printed in type of the same size and not smaller than the largest type used on the label, except that of the name of the product.

Efforts are being made by the legislative committee of the Chemical Specialties Manufacturers Assn. to unite the efforts of manufacturers of affected products to obtain a modification of the ruling. The ruling of the Fire Department affects aerosol products, among others.

New Washburn Products

Announcement of the development of a new water emulsion type floor wax that is claimed to be not harmed by freezing was made recently by T. F. Washburn Co., Chicago. The company at the same time announced that it is now manufacturing a new all-purpose liquid cleaner.

nual meeting, which comprised classroom instruction, lectures illustrated with slides and movies on technical data and a full program on insect and rodent control, was a scientific briefing by Thomas L. Huge', vice-president in charge of food processing sanitation surveys.

Discussed were methods of locating plant infestation and breeding places for vermin. Also covered were the various areas about a plant that should be inspected carefully.



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Recommended for Asphalt Tile, Rubber Tile and Composition Floors. Cleans and Waxes in one operation. No harsh scrubbing or mopping required. Packed in: 20 ounce cans, 5 lb. cans, 35 lb. pails.

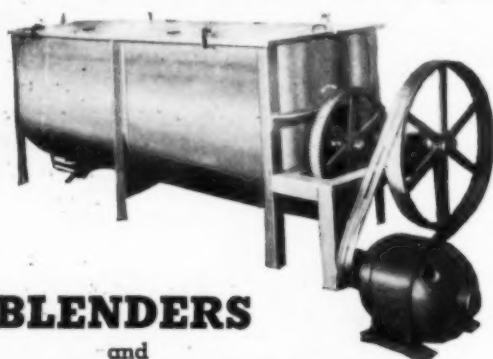
Samples and literature upon request.

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BLENDERS and BATCH MIXERS

Ideal for: Dry powders — semi-liquids
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Also manufacturers of Agitators, Kettles, Powder and Paste Fillers, Conveyors.

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been Patch-Tested recently to determine acute and subacute toxicity?

Have You Gone

the Limit in determining bactericidal action, and product protection against decomposition and mold growth?

These are but a few of the services our modern, comprehensive Research Laboratories accord you.

We have formulated and improved virtually every type of product in your fields. The purpose is a finer, modern product at less cost and greater profit.

If you have a product, processing or marketing problem, we would welcome the opportunity of talking with you — no obligation.

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West Is Reporter Subject

West Disinfecting Co., Long Island City, N. Y., described as the world's largest supplier of sanitary chemicals, is the subject of an article, "Specialist in Sanitation" in the recently issued June-July number of the Rohm & Haas Reporter, R&H house magazine. According to the article, West operates more than 60 branches with a staff of over 1,400, including 400 specially trained technical sales representatives. Its interests, the article states, range from deodorizing of fishing boats, through the control of algae in swimming pools to the washing of dishes and the laundering of clothes.

West's development of the new quaternary type germicide, "Ter-amine," and its various applications are covered, as are the concern's mosquito larvicide, moth proofing preparation and soaps and synthetic detergents.

Food Sanitation Booklet

James Laboratories, Chicago, recently announced the issuance of a new booklet entitled, "Good Sanitation is Good Business." It describes the activities of an inspection-laboratory service geared to the specific requirements of plants engaged in food processing, manufacturing and warehousing. Manufacturers and processors interested in outside help on sanitation problems are invited to write for this booklet to the company at 189 W. Madison St., Chicago 2.

Atlas Personnel Shifts

Changes in its industrial chemicals department were announced recently by Atlas Powder Co., Wilmington. George J. King has been appointed director of sales and has been transferred from New York, where he has been branch manager, to Wilmington. J. V. Miller becomes director of a newly created sales development division; C. D. Pratt director of the technical division and N. P. Sprang, director of services.

L. G. Parkinson, manager of the Chicago district office, succeeds Mr. King in the New York district.

Harry Paul of the Boston office is Mr. Parkinson's successor as branch manager in Chicago, and W. S. Rhoads has



J. V. MILLER

been transferred from Chicago to take charge of the Boston office.

E. W. Sann, formerly in charge of sales in the Wilmington office was transferred to special duties as assistant to vice-president F. S. Pollock.

Lueders Honors Pfeifer

Frederick Pfeifer of the traffic department of George Lueders & Co., New York, became the 44th member of the company's 25 year club on Aug. 24. He was tendered a luncheon at the Drug & Chemical Club, New York, and received a gold service pin and a wrist watch from the company, as well as gifts from the officers and employees.

New Fine Organics Line

A new line of industrial maintenance chemicals to be marketed under the trade name "FO" was announced recently by the Aviation-Industrial Chemicals Division of Fine Organics, Inc., New York. The line is composed of the following: "FO-101," safety solvent for electric motor cleaning; "FO-105," quaternary ammonium disinfectant; "FO-106," solvent emulsion grease cleaner; "FO-108," 20 per cent soap liquid detergent; "FO-109," waterless cleaner; "FO-114," oil cooler cleaner; "FO-115," aluminum and brass polish; "FO-116," cresol emulsion degreaser; "FO-120," paint stripper; "FO-121," carburetor and engine parts cleaner.

Chlordane for Services

The following is a letter recently received from David W. Lynch, manager of the insecticide division of Velsicol Corp., Chicago, regarding the use of chlordane for insecticides for the Armed Services:

"With the rapidly expanding activity of our Armed Forces, it is obvious there will be a sudden and large scale demand for many types of insecticides for use at home and abroad by the various branches of our Military Establishment.

"As you undoubtedly know, the Department of the Navy has approved chlordane on their Specifications—Navy: MIL-1-(15051) (Ships) Insecticide, Liquid, containing 2 per cent chlordane (for) residual.*

"Likewise, the Army has approved a chlordane-containing spray on their Specifications—Army—Insecticide Roach and Ant Control Residual Spray. QM—Stock No. 51-5-50.*

"In the event you are interested in receiving invitations to bid on their requirements, please make sure your company name is on file with the proper Procurement Office. At the moment, both Navy and Army purchases of insecticides are made by:

"Navy Procurement Office
111 East 16th Street,
New York 3, N. Y."

* "VELSICOL 1068" chlordane—clarified (refined) grade complies with these specifications.

Empire Brush Name Change

The name of Empire Brush Works, Inc., Port Chester, N. Y., was recently changed to Empire Brushes, Inc.

New Franklin Items

Two new items, "Selflok" toilet tissue holder and "Drain-Blaster" aluminum pressure cleaner for clogged drains, are now being distributed by Franklin Metal Products Co., Chicago, the firm announced recently. The "Selflok" toilet tissue holder, which retails for about \$1.50, locks automatically, securely locking rolls in place so that they cannot be removed except as used, one sheet at a time. The tissue holder is built from heavy steel and is assigned for a long use life.

The new Franklin drain opener which can be used for clogged sewers, drains in sinks and bath tubs, as well as commodes, operates by pressure, built up by hand pumping. A gauge is attached at the top of the pump.

"SCIENTIFIC" SIPHON GRAVITY FILLER *Sets the Pace!*



USED EVERYWHERE
SIMPLE and TROUBLE-FREE

FAST, ACCURATE FILLING
UNDER ALL PLANT
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FOR SOLVENTS,
LIGHT VARNISHES
and similar liquids

Operates under all
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The Accepted Standard of The Market

New type automatic inlet valve provides steady flow under all pressures *Without Foaming*. Improved filling spouts; no drip. For glass and tin. Quick change-overs. Ideal for foamy liquids, rug cleaners, soaps, no-rub floor waxes, insecticides.

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DISPENSERS LIQUID—POWDER

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Office. Validity and Infringe-
ment Investigations and Opinions.

*Booklet and form "Evidence of
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PCA Meets in Cinn. Oct. 23-25

SALES, safe use of insecticides, sanitation and public relations are to be the highlights of the 18th annual convention of the National Pest Control Association to be held Monday, Tuesday and Wednesday, October 23-25, at the Netherland Plaza Hotel, Cincinnati. In addition, an elaborate program of social functions has been worked out for women attending the meeting. A conducted tour of the Procter & Gamble Co. soap plant is one of the features of the women's program.

A departure of this year's meeting, general chairman for which is Lee C. Truman of Pest Control Services, Indianapolis, is the restricting of attendance for the first time to members of the association only. This does not apply to entomologists, biologists, public health and other governmental officials and representatives of manufacturing and supply firms.

The theme of the meeting is "Business Is Like That."

Program details available at this writing include a visual presentation of salesmanship to be conducted by

Charles F. Schuller of the University of Wisconsin. Dr. F. C. Bishopp, assistant chief, Bureau of Entomology and Plant Quarantine, U.S.D.A. will discuss "Safety in the Use of Insecticides." Also from the BE&PQ, Dr. Thomas E. Snyder will cover "Approved Reference Procedures of Subterranean Termite Control." Public relations with particular reference to the pest control industry will be discussed by W. Moscrip Miller, prominent New York public relations man.

Another subject slated to be investigated at the meeting is sanitation. A number of prominent representatives from industry and government, including Charles A. Clark, staff assistant for sanitation of General Foods Corp., New York, and an editorial director of *Modern Sanitation* magazine; Dr. R. K. Somers of the Meat Inspection Division of the Bureau of Animal Industry, U.S.D.A., and Kenneth L. Millstead of the U. S. Public Health Service, Cincinnati, are scheduled to participate in the discussion of sanitation in its relation to pest control.

Association business matters

will be covered at a special session Tuesday afternoon, Oct. 24, at which time committee meetings will be held.

Entertainment features of the meeting, which are being handled by Robert C. Yeager of Rose Exterminating Co., Cincinnati, include a buffet supper the evening of Oct. 25, and the banquet in the Pavilion Caprice the following evening.

Material and equipment exhibits will be shown during the meeting.

New Baird & McGuire List

A new schedule of prices, effective Sept. 1, was issued recently by Baird & McGuire, Inc., Holbrook, Mass. Upward revisions were made on the following: coal tar emulsifiable disinfectants, disinfectant specialties, pine oil and pine type disinfectants, cresol and cresylic compounds, closet chemical sanitation specialties and motor wash and engine dip. Unchanged were prices on most insecticides, sanitation specialties, wood preservatives and metal polishes.

SAACI Sales Clinic

The first chemical sales clinic sponsored by the Salesmen's Association of the American Chemical Industry will be held at the Roosevelt Hotel, New York, November 2 and 3.

It may be attended by any member of the association, any chemical sales manager, any chemical salesman, or prospective chemical salesman, and any student of chemistry in his senior year or in graduate school who plans to enter sales work.

Topics to be covered at the two-day session are selling heavy chemicals; selling fine chemicals; introducing new chemicals; service in selling chemicals; organizing salesmen's records; planning the day; the entertainment bugaboo; are managers people, and a look toward the future.

The cost to SAACI members is \$20, to non-members, \$22.50 and to students, \$15. Included in this cost will be tickets for two luncheons and one banquet. Requests for registration blanks should be addressed to Paul B. Slawter, Jr., Salesman's Association of the American Chemical Industry, 225 Park Avenue, New York 17.

Extremely high absorbency rate of new "Dura-Sorb" yarn now used for mopheads in the line of wet mops made by American Standard Mfg. Co., Chicago, is shown by test below. A strand dipped into glass of water instantly becomes saturated. When strand is milked into another glass, amount of water strand has absorbed can be seen.



Tamms SILICA
Soft Amorphous Type

Grades to meet various abrasive requirements . . . for all kinds of metal polishes.

Tamms TRIPOLI
Rose and Cream Colors

Once-ground, double-ground and air-float — ideal grades for buffing and polishing. Also rubbing compounds.

Preferred for
POLISHES!

Tamms

Tamms products are widely used in the polish trade, preferred for quality results. Write today for prices and samples.

Tamms MULTI-CEL
Diatomaceous Earth

Top grade, ground extremely fine. A milder abrasive than silica. Best for silver polish.

Tamms BENTONITE
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Very finely-ground colloidal clay. Wholly soluble — absorbs 5 times its weight in water.

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219 FINE CLARCO PRODUCTS

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1. **AUTOMOTIVE**
Clarco Car Wash
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Driveway Cleaner
And Many More

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INSTITUTIONAL**
Hand Dishwashing
Compounds
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Compounds
China Dip
Silver Dip
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3. **INDUSTRIAL**
Dairy Cleaners
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And Many Others

**COMPLETE
FACILITIES,
INCLUDING
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FOR PRIVATE
LABEL AND
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A broad range of shades for Shampoos, Soaps, Drugs, Medicines, Creams, Rinses, and Cosmetics.

PYLA-SYNTH COLORS

Fast colors for the New Synthetic Detergents in Red, Blue, Green, Amber and Yellow.

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- Send for free samples.
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NEW YORK CITY 17

DCAT to Hear Closs

Dr. J. O'Neill Closs, executive secretary of the American Pharmaceutical Manufacturers' Association, will be the feature speaker at the 60th annual meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trade, being held at Shawnee Inn, Shawnee-on-Delaware, Pa., Thursday, Friday and Saturday, Sept. 21-23. Dr. Closs, the sole speaker of the business session scheduled for Friday, Sept. 22, will discuss "Trade Associations and Industry Problems." In addition, reports of officers and committee chairmen will be heard and the election of officers will take place. Fred G. Singer of E. I. du Pont de Nemours & Co., Wilmington, is chairman of the business program committee.

Other committee chairman include:

Harold C. Green, L. Sonneborn Sons, Inc., New York, general chairman; Charles P. Walker, Citro Chemical Co., banquet; Claude A. Hanford, Pharmaco, Inc., evening entertainment; Robert B. Magnus, Magnus, Mabey & Reynard, Inc., greetings; William W. Huisking, Charles L. Huisking & Co., golf; Mrs. F. Dean Hildebrandt, women's golf; William S. Auchincloss Oil, Paint & Drug Reporter, memorials; James G. Flanagan, S. B. Penick & Co., miscellaneous sports activities; Ira P. MacNair, MacNair-Dorland Co., publicity; Lloyd I. Volkening, Ivers-Lee Co., reception; Charles M. Macauley, Pro-phy-lac-tic Brush Co., registration; William H. Sheffield, Jr., Innis, Speiden & Co., transportation.

ASTM Wax Group Meets

Committee D-21 on Wax Polishes and Related Materials of the American Society for Testing Materials will meet in Washington, D. C., Sept. 14-15, it was announced recently.

Sterling Names Bronold

The appointment of Alan J. Bronold as sales manager of Sterling Electric Motors, Inc., Los Angeles, was announced recently. He succeeds Allen Adams former head of the firm's international and domestic sales operations, who has been forced to give up the post due to ill health. He continues as secretary-treasurer. Mr. Bronold is a graduate electrical engineer of Bliss Electrical School and Business Administration at Northwestern University.



New type metal sponge made of continuous ribbon of curled Monel that is rust and corrosion resistant. Made by Kleenette Manufacturing Co., Chicago, it is said to be soft and flexible.

He is also a Westinghouse graduate student, having received his B.S.E.E. in commercial electrical engineering. He was previously assistant general sales manager in charge of national sales for Sturtevant Division of Westinghouse, Boston, with which concern he had been associated since 1926.

Anchor-Hocking Changes

Anchor Hocking Glass Corp., Lancaster, O., recently named Frank Baumgardner manager of market analysis and development. He was formerly manager of the company's Chicago sales office, and is succeeded by Bernard P. Fox.

Brooks Brown, Jr. becomes manager of the company's Louisville office. Brooks Brown, Sr. remains with the office as consultant.

New Detergent-Sanitizer

The development of a new concentrated detergent-sanitizer and deodorant, to be marketed under the trade name, "Kel-Cide," was announced recently by Kel-Cide Products, New York. It is based on alkyl dimethyl 3,4 dichlorobenzyl ammonium chloride and an aromatic polyglycol ether. The compound is said to be non-toxic, non-irritating and non-sensitizing in recommended use dilution. A two ounce sample, sufficient to make a 10-gallon working solution, is available on request.

New Fibre Waste Hamper

An all fibre waste hamper with steel reinforced top and bottom edges, and convenient hand holes for lifting, was announced recently by William Bal Corp., Newark, N. J. The hamper is designed specifically for use where space is limited. The shape and standard size of the hamper has been designed for industrial users, for whom accumulation of waste is a daily problem. Standard length, width and depth is 20 x 10½ x 30 inches. Full details are available in a catalog folder.

S.C.I. Elects Esselen

Dr. Gustavus J. Esselen, vice president of the United States Testing Co., Hoboken, N. J., was recently elected vice president of the Society of Chemical Industry which maintains its headquarters in London, England.

Dr. Esselen has been chairman of the American Section of the Society for the past year.

Dishwashing Comp.

(From Page 82)

are indebted to M. Haftel and H. Sosson, Industrial Test Laboratory, Philadelphia Naval Shipyard, for their respective assistance in obtaining the experimental data and in preparation of the graphs.

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The views in this article are those of the authors and should not be construed as the official views of the Navy Department.

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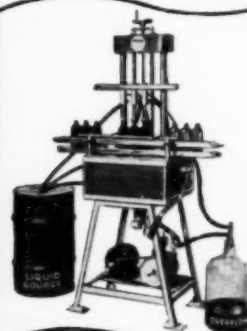
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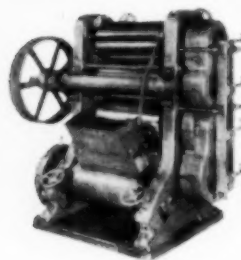
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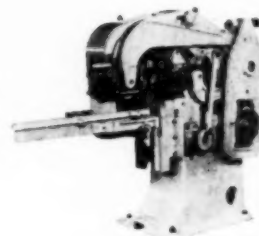


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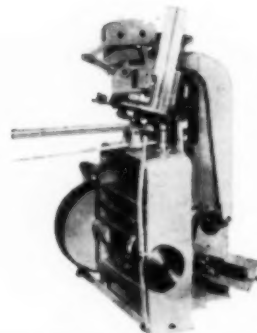


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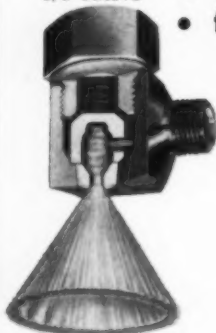
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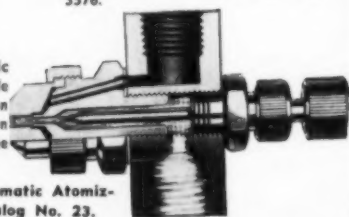


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On Munitions Board List

Insecticides, fungicides and propellants are among those chemicals included in the voluntary program on production allocation which operates primarily through the Munitions Board, it was learned recently. The program, which is a peacetime plan providing for the survey of plants at the request of a government agency and, if the manufacturer agrees, the development of a plan for the specific production that would be required in the event of a war, is described in detail in Munitions Board Manual No. 90-1, "Production Allocation Manual." It was published in March of this year and is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 75 cents.

Manufacturers seeking further information regarding products of theirs that fall within the program and whose plants have not as yet been surveyed are advised to direct their inquiries to the Industrial Mobilization Planning Division of the government

agency they believe would be most interested. The agencies now active are the Munitions Board, Departments of the Army, Navy and Air Force, Atomic Energy Commission and the Maritime Commission. In the case of the three branches of the military service the inquiry should be directed to the Munitions Board which serves as a clearing house for them.

Koppers Advances Jones

Irvin H. Jones, manager of the patent section, research department of Koppers Co., Pittsburgh, since 1944, was recently appointed international development manager. He is succeeded by Dr. W. J. Monacelli, assistant manager of the patent section, who becomes acting manager.

In his new position, Mr. Jones is responsible for the development of management type contracts and the participation of Koppers in foreign business ventures with foreign nationals in the chemical, tar products, wood preserving, coke and metal products field.

APHA Meets Oct. 30

The 78th annual meeting of the American Public Health Association and meetings of 32 related organizations in the field of public health and preventive medicine will be held in Kiel Auditorium, St. Louis, Monday through Friday, Oct. 30 to Nov. 3. Topics to be discussed by more than 400 speakers participating in the scientific programs developed by 13 sections include: insect and rodent vectors of disease.

PMMI Meets Sept. 23-26

The 18th annual meeting of the Packaging Machinery Manufacturers Institute will be held Saturday, Sunday, Monday and Tuesday, Sept. 23-26, at the Homestead, Hot Springs, Va., it was announced recently by Edwin H. Schmitz, Standard-Knapp, who is chairman of the program committee.

The annual business meeting and industry planning conference is scheduled for Sept. 25 and 26.

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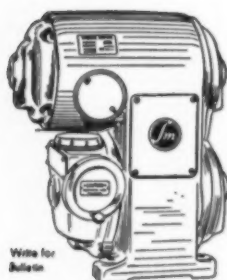
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